SOUTH STATION
EXPANSION

South Station Expansion Project

Environmental Assessment and Section 4(f) Determination

September 2017

massDOT
Massachusetts Department of Transportation

U.S. Department of Transportation
Federal Railroad Administration

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ENVIRONMENTAL ASSESSMENT AND SECTION 4(F) DETERMINATION

for the SOUTH STATION EXPANSION PROJECT
City of Boston, Massachusetts

Prepared by:
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
and
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

Pursuant to:
National Environmental Policy Act (42 U.S.C. 4321 et seq.) and implementing regulations (40 CFR Parts 1500-1508); Section 4(f) of the U.S. Department of Transportation Act (49 U.S.C. 303(c)); Section 106 of the National Historic Preservation Act (16 U.S.C. 470 et seq.); Section 176(c) of the Clean Air Act (42 U.S.C. 7506); and FRA's Procedures for Considering Environmental Impacts (64 FR 28545 and 78 FR 2713).

10/27/17

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SOUTH STATION
EXPANSION

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Summary

The Massachusetts Department of Transportation (MassDOT), the Massachusetts Bay Transportation Authority (MBTA), and the National Railroad Passenger Corporation (Amtrak) have for decades identified the expansion of rail and passenger capacity at South Station as a crucial transportation need, one that has been articulated in multiple local, regional, state, and Northeast Corridor (NEC)-wide planning documents. The Federal Railroad Administration (FRA), in conjunction with MassDOT, the MBTA, and Amtrak, is now pursuing the expansion of South Station through this Environmental Assessment (EA) and other project development efforts.

FRA created the High Speed Intercity Passenger Rail Program (HSIPR) to allocate funds to programs aimed at developing new high-speed or intercity passenger rail services or substantially upgrading existing corridor services. FRA awarded a $32,500,000 HSIPR grant in 2011 to complete state and federal environmental review and preliminary engineering for the South Station Expansion (SSX) project.

The Massachusetts Environmental Policy Act (MEPA) environmental review process for this project concluded with the issuance of a final Certificate on August 12, 2016, on the Final Environmental Impact Report (FEIR).

In order to use federal funding, the project also requires review under the National Environmental Policy Act (NEPA). This EA was prepared pursuant to the NEPA (42 United States Code [U.S.C.] 4321 et seq.), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), FRA's *Procedures for Considering Environmental Impacts* (64 Federal Register [FR] 28545 [May 26, 1999] and 78 FR 2713 [January 14, 2013]), Section 4(f) of the U.S. Department of Transportation Act (49 U.S.C. 303), Section 106 of the National Historic Preservation Act (16 U.S.C. 470 [1966]), and Executive Order 12898 - *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Population*s (59 FR 7629 [February 16, 1994]). The USPS, the Federal Transit Administration (FTA), the Federal Highway Administration (FHWA), and Amtrak participated in the review of the draft EA as Cooperating Agencies.

FRA and MassDOT released the draft EA and draft Section 4(f) Determination in April 2017 to agencies, project stakeholders, and individuals on the project distribution list. The draft document was circulated for a 30-day public comment period. FRA will issue its Final Section 4(f) Determination and the NEPA decision document, a Finding of No Significant Impact (FONSI). Public comments are addressed in the FONSI.

This EA identifies a No Build Alternative and a Build Alternative; provides an assessment of effects (both positive and negative) on the natural and built environment for both the No Build Alternative and Build Alternative; identifies measures to avoid, minimize, or mitigate any negative effects; and includes the Section 4(f) analysis. A horizon year of 2035 and an approximate opening year of 2025 are used for analysis of the SSX project.

Historic South Station is a critical component of transportation infrastructure for the City of Boston and the Boston metropolitan area, and is the second busiest transportation center in New England, after Logan International Airport. As the northern terminus of the NEC, as currently defined by Amtrak, and the eastern terminus of Amtrak's Lake Shore Limited service, South Station Rail Terminal is the sixth busiest station in the national Amtrak system and the fourth busiest station on the NEC.[1] The MBTA manages and runs

[1] Amtrak Media Relations. *National Fact Sheet Fiscal Year 2015*. February 2016.

the fifth largest commuter rail system in the nation, which terminates its south side services at South Station. The south side portion of the MBTA's commuter rail system that terminates at South Station serves central and southeastern Massachusetts. It also provides connections to the MBTA Red Line, the transit spine for communities north and south of downtown Boston; to Logan International Airport via the MBTA Silver Line; and to intra- and inter-city bus services via ten MBTA bus routes and several private bus companies operating out of the South Station Bus Terminal. Located in the heart of Boston's financial district, it provides access to the city for commuters, tourists, and residents. The South Station headhouse is listed on the National Register of Historic Places, and is Boston's first, and now only, remaining monumental public example of the Classical Revival Style.

1. Purpose and Need

There are three fundamental transportation deficiencies (system needs) that the project intends to address to improve both current and future railroad operations:

- **Terminal capacity constraints:** South Station today has fewer than half the original number of tracks that were available when the station first opened in 1899, but it continues to serve as the most heavily used passenger rail facility in New England.
- **Inadequate station facilities:** South Station's passenger facilities, including platforms, waiting areas, and customer support services, do not meet preferred standards for passenger transit facilities.
- **Insufficient layover space:** Additional midday vehicle layover capacity for the MBTA's south side commuter rail service area is needed to allow the commuter rail system to expand in the future.

As a result of these deficiencies, South Station is experiencing increased congestion, contributing to declining service reliability of intercity passenger and commuter rail operations, as well as lost opportunities for an expansion of existing passenger rail services and the addition of new services.

In order to address these system needs, the purpose of the SSX project is to expand South Station Rail Terminal capacity and related layover capacity to meet current and anticipated future (2035) high-speed, intercity, and commuter rail service needs to:

- Enable growth in passenger rail transportation along the NEC and within the Commonwealth of Massachusetts;
- Improve service reliability through updates to rail infrastructure and related layover capacity;
- Improve the passenger capacity and experience of using South Station;
- Promote city-building in a key area of Boston; and
- Allow for Dorchester Avenue to be reopened for public use and enjoyment for the first time in decades.

To evaluate the SSX project alternatives, MassDOT developed four measurable performance objectives for passenger rail operations in the 2035 horizon year. These are directly related to the SSX project purpose and need and include:

- Meeting 95% on-time performance (OTP) goals and minimizing delays;
- Providing sufficient track and platform capacity;

- Accommodating passenger service needs; and
- Providing adequate train layover capacity.

Additionally, MassDOT and FRA evaluated the SSX project alternatives relative to potential environmental impacts.

2. Proposed Action

The Proposed Action is the Build Alternative (see Section 3), which satisfies the project purpose and need by including the following: expand the South Station Rail Terminal, add new tracks and platforms, upgrade the station area at the existing South Station Transportation Center, and increase capacity at two layover facilities,[2] Widett Circle and expanded Readville – Yard 2. Figures S-1, S-2, S-3, and S-4 depict the Proposed Action. Project components (in order of the proposed construction sequence) include:

- **Acquire and Demolish the United States Postal Service (USPS) Facility:** Includes acquiring the USPS property and demolishing the USPS General Mail Facility (GMF) located on Dorchester Avenue adjacent to South Station, which would provide an approximately 14-acre site on which to expand South Station.
- **Reopen Dorchester Avenue and Extend the Harborwalk:** Restores approximately 0.5 miles of Dorchester Avenue (which is currently closed off for USPS operations only) for public use and for station access and reconnects Summer Street to the South Boston area. Includes landscaping and improved pedestrian and cycling connections and facilities, including adjacent sidewalks and crosswalks, and construction of a 0.5-mile extension of the Harborwalk.
- **Expand the South Station Terminal:** Includes adding seven new tracks and four platforms for a total of 20 tracks and 11 platforms; reconfiguring several existing tracks and platforms; upgrading existing rail infrastructure, including interlockings; adding an expanded headhouse; and adding a mid-platform elevated concourse.
- **Construct Rail Layover Facilities:** Provides layover space by constructing a new facility at Widett Circle and expanding the existing Readville – Yard 2 MBTA layover facility to meet layover facility program needs and operational requirements.

In consultation with the City of Boston, MassDOT selected a Build Alternative that does not include joint development, thereby eliminating the environmental impacts of the project associated with those development scenarios. The design of the expanded headhouse and Terminal will not preclude, and to the extent practicable, will support private transit-oriented development in the future. MassDOT continues to be committed to working with the City of Boston, interested stakeholders, and the general public to ultimately realize a vision of an expanded South Station integrated with transit-oriented development that contributes to a vibrant Downtown Boston with private development and non-transportation uses. However, with the City of Boston currently engaged in the Imagine Boston[3] planning process, it would be premature to speculate on the development component of South Station at this time.

[2] Beacon Park Yard (BPY) in Allston, previously identified as a third layover facility alternative in the Draft Environmental Impact Report (DEIR), is now subject to environmental review as part of the I-90 Allston Interchange Improvement project (I-90 project) (Executive Office of Energy and Environmental Affairs (EEA No. 15278). The I-90 project is further refining the concept design and environmental evaluation of BPY, which is occurring concurrently with the SSX project.

[3] Imagine Boston will be Boston's first citywide plan in 50 years. The planning process began in 2015 and is anticipated to be completed in 2017.

3. Alternatives

In order to develop alternatives that could address the project purpose and need, MassDOT and FRA (sometimes referred to as the Project Team) divided the Proposed Action into five major elements, and established a separate alternatives analysis process for each of those elements:

- Station headhouse;
- Rail;
- Layover;
- Joint development;[4] and
- Roadway.

The Project Team developed a separate set of alternatives for each of these five elements and conducted a screening process for each set of alternatives, dismissing those alternatives that were not reasonable or feasible, and identifying those alternatives that would best meet the goals of the project, while being compatible with other project elements. The Project Team evaluated the alternatives for each project element using criteria and principles specific to that element. The Team then identified an alternative for each project element that best met the needs of the project, and incorporated it into a comprehensive Build Alternative for the project, which was then advanced for full environmental evaluation in this EA (see Section 2).

Below is a brief description of the alternatives considered for each project element during the alternatives analysis process:

- **Station Headhouse Alternatives: Conceptual design –** MassDOT established a series of design principles for the South Station headhouse expansion, addressing planning and urban design, station architecture, access and connectivity, and historic preservation. Initial unconstrained concepts included expanding the South Station footprint to include the entire USPS GMF site and 245 Summer Street, as well as relocating or altering the South Station Air Rights (SSAR) project[5]. The station design alternative selected to be part of the Build Alternative includes an expanded headhouse located along Dorchester Avenue, comprised of a new trackhead concourse, a new elevated concourse, and emergency egress elements. The headhouse alternative chosen as part of the Build Alternative will accommodate the projected 2035 growth in local and regional travel through South Station.

- **Rail Alternatives: Track configuration and platform –** Simulation tests showed that 20 station tracks represent the optimal number for an expanded station.[6] As part of the SSX project, MassDOT considered four unconstrained and four constrained terminal track

[4] Joint development is non-transportation related development located in the remainder of the land acquired from the USPS that would not be occupied by the transportation infrastructure proposed as part of the SSX project. The program or type of development was not specified as part of the SSX project.

[5] Prior to the expansion of South Station, MassDOT anticipates that the site will include the planned South Station Air Rights (SSAR) project, consisting of approximately 1.8 million square feet of mixed-use development to be located directly above the railroad tracks and the existing South Station headhouse. The SSAR project would also include expansion of the existing Bus Terminal towards the existing headhouse. The SSAR project was reviewed by the Massachusetts Secretary of the Executive Office of Energy and Environmental Affairs (EEA) in 2006. Although it has not yet begun construction, the SSX project assumes the SSAR project as an existing condition and as part of the SSX project's No Build Alternative. Coordination between MassDOT and the SSAR project proponent will continue as engineering and design of each project advances. Construction of the SSAR project is anticipated to commence in 2018.

[6] Massachusetts Department of Transportation. *Boston South Station HSIPR Expansion Project, Technical Memorandum: Network Simulation Analysis of Proposed 2030 MBTA/Amtrak Operations at South Station. Final Report.* August 1, 2010. http://www.massdot.state.ma.us/Portals/25/Docs/FRA_HSIPR/Appendix_A1.pdf.

configuration rail alternatives,[7] advancing two of the constrained alternatives through an initial screening analysis. The two constrained alternatives were similar within the Terminal track area and differed mostly at the Tower 1 Interlocking. A further screening analysis resulted in the selection of constrained Rail Alternative 3 to advance as part of the Build Alternative. Rail Alternative 3 would largely maintain the existing platform configuration while adding new tracks and platforms parallel to the existing ones to allow for maximum platform accessibility for incoming trains. This alternative accommodates the projected rail service forecasts for 2035, minimizes disruptions to existing operations, and minimizes the level of reconstruction of the existing infrastructure within the Terminal.

- **Layover Alternatives: Layover facilities –** MassDOT conducted a comprehensive alternatives analysis to identify potential locations to meet midday layover needs for the MBTA's south side commuter rail services. MassDOT identified and evaluated 28 alternatives in a tiered screening process. MassDOT determined that scenarios that maximized the use of the Widett Circle and Beacon Park Yard (BPY) sites, in combination with additional capacity at the MBTA's existing Readville – Yard 2 facility, would provide the greatest capacity and operational flexibility when compared to other options.[8] All three sites are critical to addressing the short-term and long-term midday layover needs. As part of the Build Alternative, MassDOT selected Widett Circle and an expanded Readville – Yard 2 to advance in this EA to support future expansion of the Terminal. MassDOT will consider design alternatives within the MEPA and NEPA processes for a reconfigured and expanded layover space at BPY in the I-90 Allston Interchange Modification project (I-90 project).[9] As part of the I-90 project, adjustments to the I-90 interchange would likely require reconfiguration of the conceptual BPY layover area designs. MassDOT's decision to separate the BPY layover site from the SSX project and include it in the I-90 project was done both to provide a more focused discussion of impacts in the affected community surrounding BPY and because the I-90 project, including the construction of the BPY layover facility, is expected to advance to construction prior to South Station. Although the NEPA class of action has not been formally identified, MassDOT anticipates that the I-90 project, including BPY, will be reviewed as an EA and led by the Federal Highway Administration (FHWA).

- **Joint Development Alternatives –** MassDOT considered various joint development scenarios for South Station. Although MassDOT did not select a Build Alternative with joint development, the design of the expanded headhouse and Terminal will not preclude, and to the extent practicable, will support private transit-oriented development in the future.

- **Roadway Alternatives –** MassDOT analyzed two roadway alternatives, both of which included the restoration of Dorchester Avenue, its connection to Summer Street, landscaping, and improved pedestrian and cycling connections and facilities. The first alternative included a 100-foot wide cross section, while the second included an 80-foot wide cross section. MassDOT selected the 100-foot wide cross section for further evaluation as part of the Build Alternative.

[7] Unconstrained rail alternatives are not limited by the property lines of the existing South Station and USPS property and/or constitute a complete demolition and rebuild of the South Station Terminal track area to capture all potential operational benefits. Constrained rail alternatives focused improvements within the boundaries of the existing South Station and USPS property. With the unconstrained rail alternatives, FRA and MassDOT explored opportunities outside of the original study area. Although the unconstrained rail alternatives could help achieve the project goals, they had substantial impacts to major infrastructure adjacent to and within the terminal. The costs associated with the unconstrained rail alternatives outweighed the operational benefits gained, and the Project Team then analyzed rail alternatives within a more defined boundary, the constrained rail alternatives. The constrained rail alternatives did not extend beyond the South Station/USPS property lines and did not impact adjacent infrastructure, including: I-90 vent tunnel building, interstate highway access ramps, South Station bus terminal, or the SSAR project. FRA and MassDOT analyzed a total of four constrained rail alternatives to minimize impacts to the existing infrastructure while still improving operations to and from the terminal.

[8] A detailed layover facility site alternatives analysis is included in Appendix C of the Massachusetts Department of Transportation, South Station Expansion, *Environmental Notification Form*, March 2013.

[9] The I-90 Allston Interchange Improvement Project (I-90 project) site includes the I-90 interchange, land owned by Harvard University, former CSX rail yard, and an intermodal terminal known as Beacon Park Yard, as well as the MBTA's Framingham/Worcester branch of the MBTA's commuter rail line.

Thus, the Build Alternative includes the following: expand the South Station Rail Terminal, add new tracks and platforms, upgrade the station area at the existing South Station Transportation Center, and increase capacity at two layover facilities,[10] Widett Circle and expanded Readville – Yard 2. As mentioned in Section 2, the Build Alternative is the Proposed Action, and is depicted in Figures S-1, S-2, S-3, and S-4.

NEPA regulations require that the lead federal agency also define a No Action Alternative, or the conditions that will exist in an analysis year if a proposed action is not implemented. Under NEPA, the No Action Alternative is sometimes referred to as the No Build Alternative. Thus, this EA also considers a No Build Alternative, consisting of the existing transportation facilities and services and all future funded transportation improvement projects in the vicinity of South Station. It represents the base condition against which the Build Alternative is measured. In the No Build Alternative, South Station would remain as it currently exists, with the exception of activities conducted as part of the MBTA's State of Good Repair (SGR) program. Prior to the expansion of South Station, this EA assumes that the site will include the planned SSAR project, consisting of approximately 1.8 million sf of mixed-use development located directly above the railroad tracks at the existing South Station headhouse. The SSAR project will also include expansion of the existing Bus Terminal towards the existing headhouse. The SSAR project was approved by the Secretary of EEA in 2006[11] and filed a Notice of Project Change in 2016[12]; however, it has not yet begun construction. Nonetheless, for environmental review of the SSX project, the SSAR project is assumed to be built for the future year analysis, and is part of the SSX project's No Build Alternative.

[10] Beacon Park Yard (BPY) in Allston, previously identified as a third layover facility alternative in the Draft Environmental Impact Report (DEIR), is now subject to environmental review as part of the I-90 project (Executive Office of Energy and Environmental Affairs (EEA No. 15278). The I-90 project is further refining the concept design and environmental evaluation of BPY, which is occurring concurrently with the SSX project.

[11] The South Station Air Rights (SSAR) project was approved by the Secretary of the Executive Office of Energy and Environmental Affairs (EEA) in 2006 (EEA No. 3205/9131).

[12] The SSAR project filed a Notice of Project Change with the Boston Redevelopment Authority (BRA), now Boston Planning and Development Agency (BPDA), on July 29, 2016. http://www.bostonplans.org/getattachment/147f7f58-dd54-4702-8659-ce81707bfc35

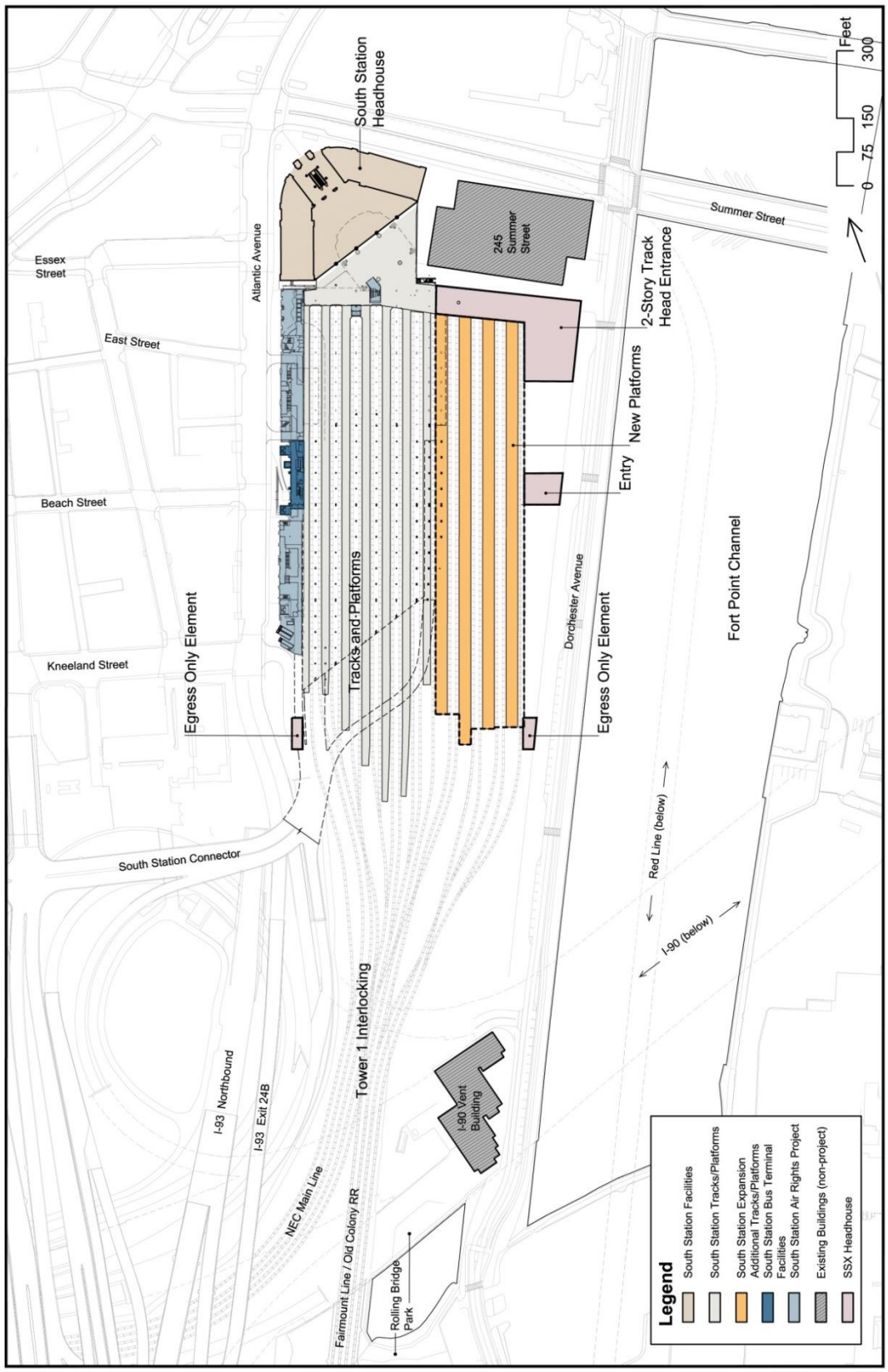

Figure S-1 — South Station Site – Proposed Platform Level

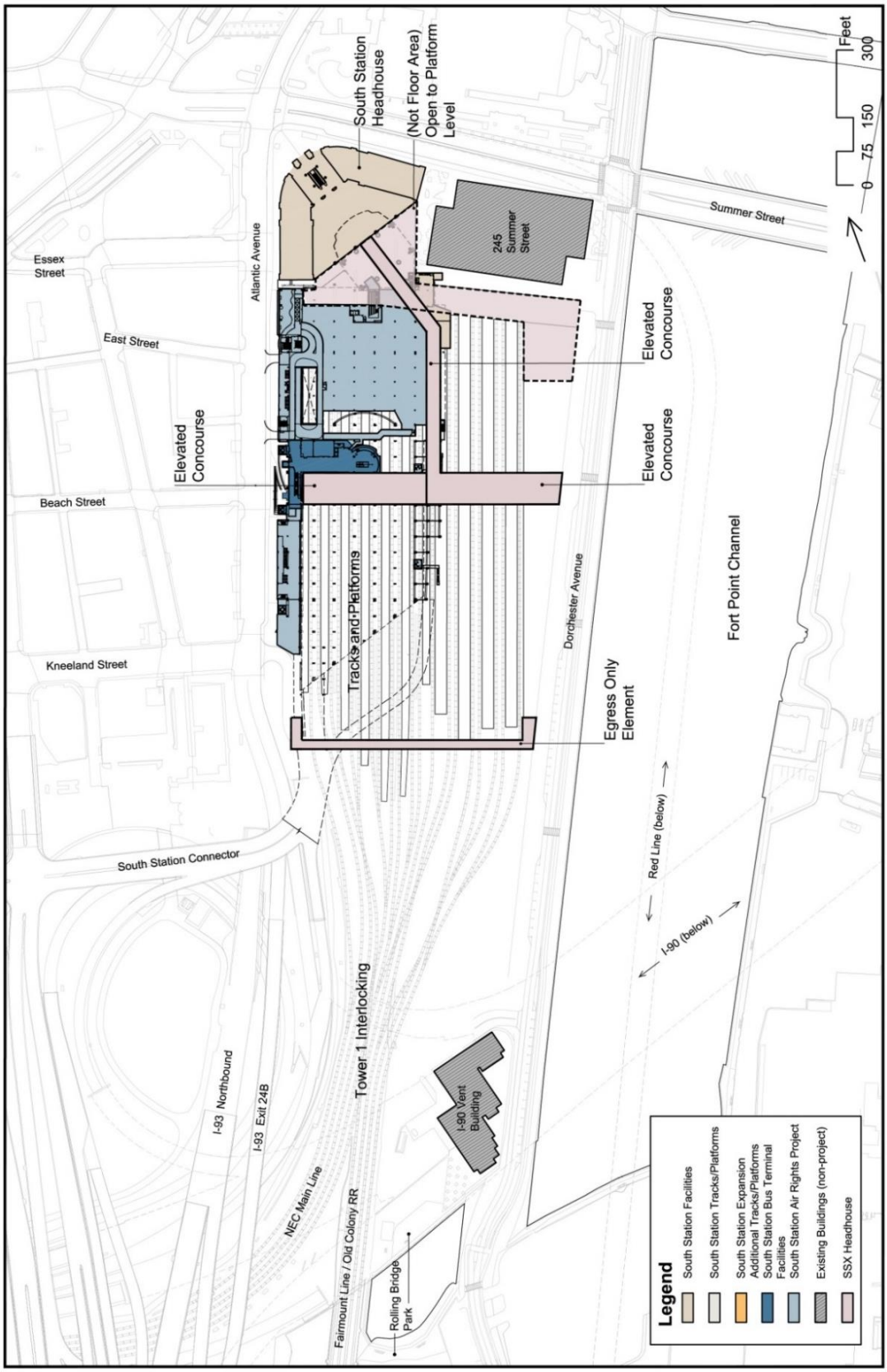

Figure S-2 — South Station Site – Proposed Elevated Concourse Level

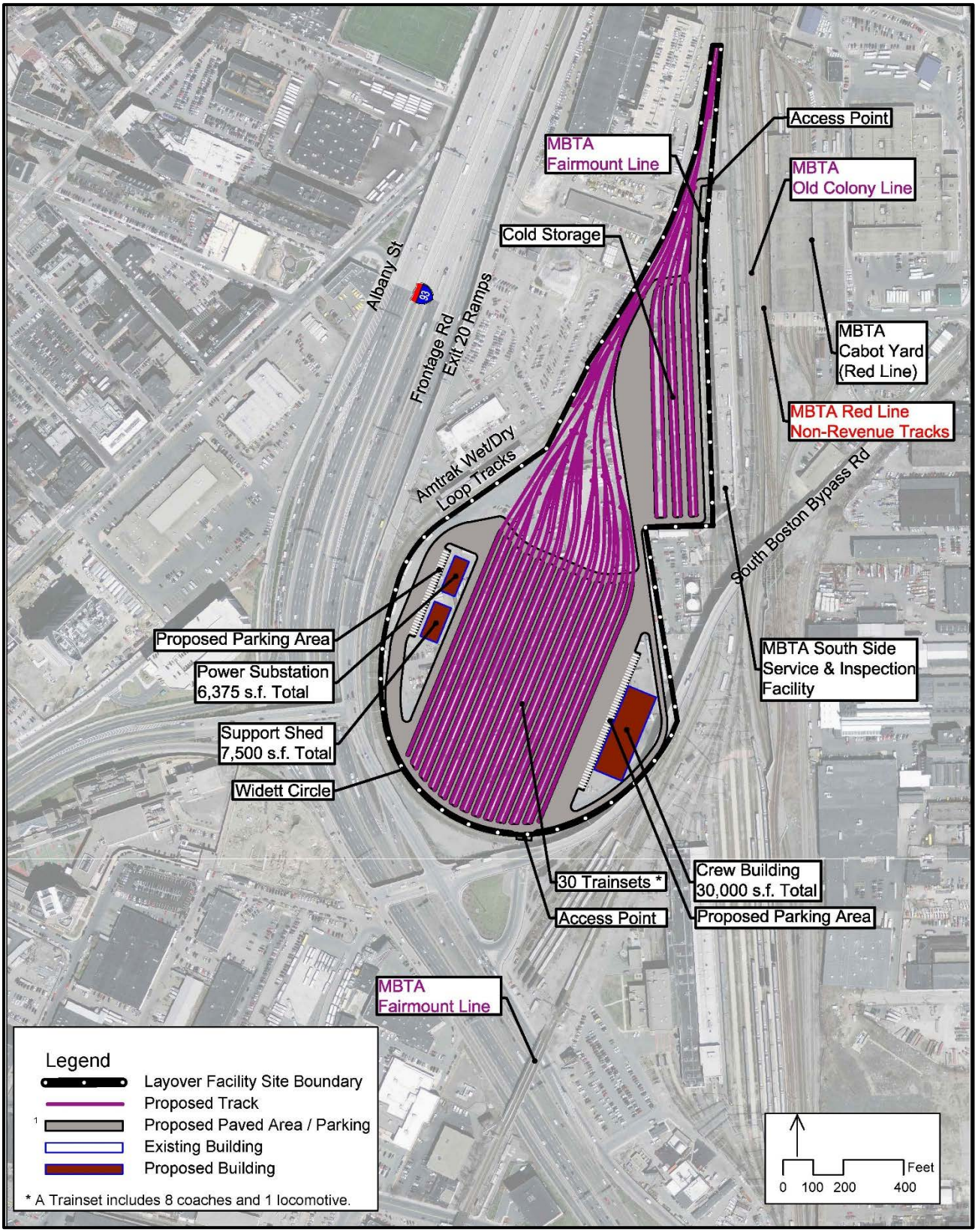

Figure S-3 — Widett Circle – Concept Plan

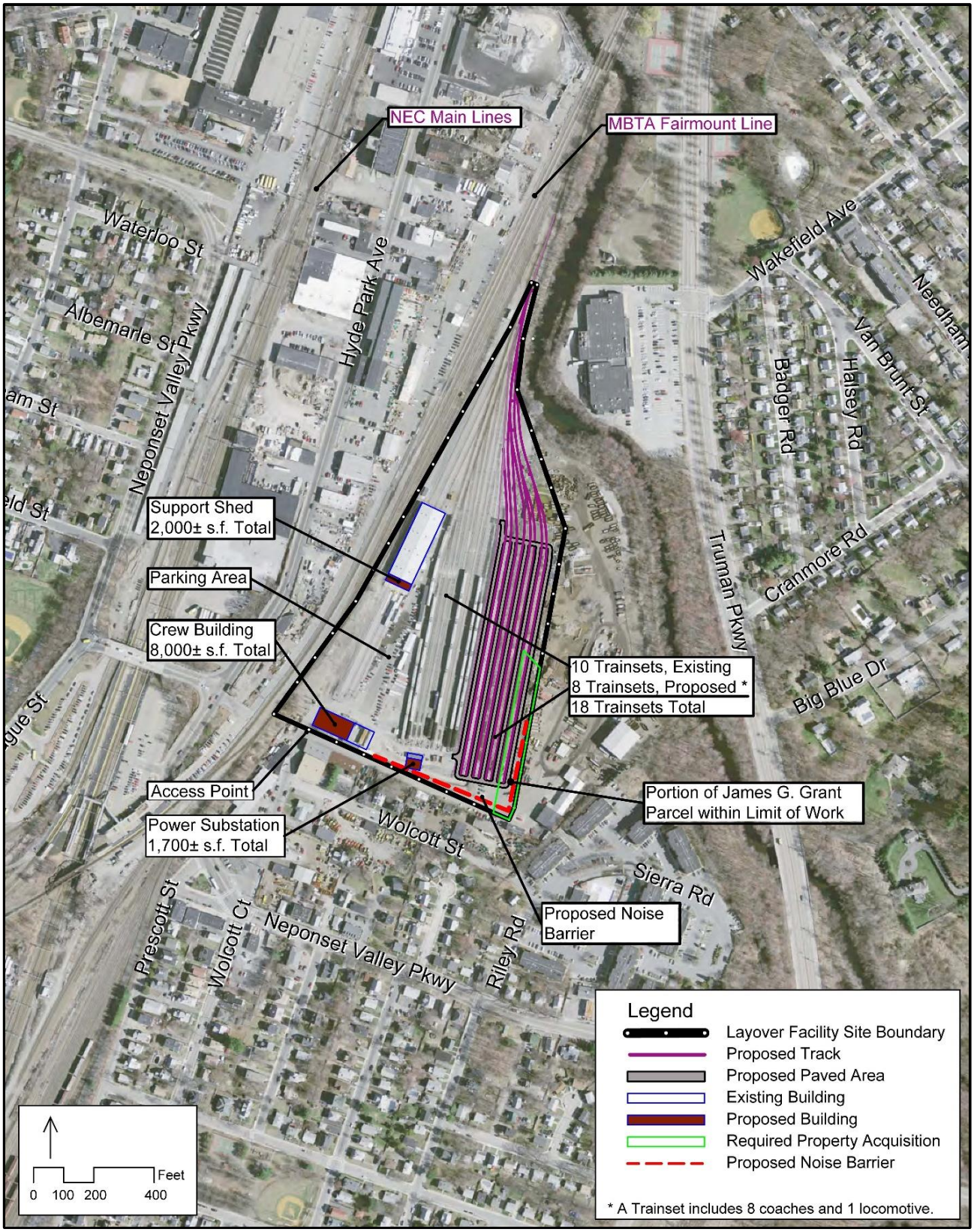

Figure S-4 — Readville – Yard 2 – Concept Plan

4. Environmental Consequences

Potential impacts related to the physical, biological, chemical, economic, and social conditions of the project sites, immediate surroundings, and the region were identified and analyzed for the No Build and Build Alternatives. All feasible measures were incorporated to first avoid and then minimize any impacts. Environmental resources, potential impacts, and proposed mitigation measures associated with the Build Alternative are summarized in Table S-1 below. These impacts were compared to the effects of the No Build Alternative in the year 2035, except where otherwise noted.

Table S-1 — Environmental Resources, Potential Impacts, and Proposed Mitigation

Environmental Resource	Potential Impacts of the Build Alternative	Proposed Mitigation
Air Quality	• No significant impacts. • Reduces carbon dioxide (CO_2) emissions from locomotives idling at South Station. • Increases CO_2 emissions from other mobile sources locally. • Beneficial regional impact on CO_2 emissions.	• No mitigation required.
Noise and Vibration	• Generates moderate noise impacts at 245 Summer Street. • Generates non-significant impacts to sensitive noise receptors across the Fort Point Channel. • Generates moderate noise impacts along Wolcott Street and Wingate Road, and Riley Road and Sierra Road in the vicinity of Readville – Yard 2. • No vibration impacts.	• Construction of an approximately 1,450-foot long, 18-foot high noise barrier, extending along the easternmost track. • Extension of the existing berm/noise barrier at Readville – Yard 2 to approximately 800 feet long and 18 feet high.
Water Resources and Water Quality	• No significant impacts. • Reduces net impervious cover at South Station and Widett Circle. Increases net impervious cover at Readville – Yard 2. • Provides ground water recharge at South Station. • Improves water quality. • Reduces water use and wastewater generation at Widett Circle. Increases water use and wastewater generation at South Station and Readville – Yard 2.	• Stormwater Best Management Practices (BMPs) will mitigate changes in stormwater peak flow rates, runoff volumes, groundwater recharge volumes, and water quality, and limit construction impacts. • Site-specific Stormwater Pollution Prevention Plans and Operation and Maintenance (O&M) plans will be prepared. Water efficiency measures will be incorporated. • An Infiltration/Inflow (I/I) plan will be developed to mitigate for increased wastewater flows at the South Station site.
Wetlands	• No direct wetland impacts at South Station and Widett Circle. • Non-significant resource impacts at South Station include land subject to coastal storm flowage, coastal bank, and buffer zone to coastal bank. • Non-significant resource impacts at Readville – Yard 2 include riverfront area,	• No mitigation required for Widett Circle. • Work at South Station and Readville – Yard 2 will comply with appropriate performance standards and any conditions required by the Boston Conservation Commission. • Mitigation (if required) for disturbed wetland impacts at Readville – Yard 2

Environmental Resource	Potential Impacts of the Build Alternative	Proposed Mitigation
	isolated vegetated wetlands, and buffer zone to Neponset River bank.	to be determined through consultation with U.S. Army Corps of Engineers (USACE).
Floodplains and Sea Level Rise	• No significant impacts. • No impacts to flood storage capacity. • Helps mitigate current and future flooding.	• Raises a portion of the seawall to help mitigate flooding from projected two feet of sea level rise by the year 2050. • Additional site-specific elements will be implemented to minimize vulnerability to future flooding events. • Drainage systems will be sized for future climate conditions where necessary.
Waterways and Coastal Zone Management	• No impacts to Wild and Scenic Rivers. • Replaces a nonwater-dependent use with publically accessible development, transportation infrastructure, open space. • Requires Chapter 91 license for a new nonwater-dependent infrastructure project and a Public Benefits Determination.	• No mitigation required.
Energy and Greenhouse Gas (GHG) Emissions	• No significant impacts. • Reduces stationary source GHG emissions in compliance with the Massachusetts Stretch Energy Code.	• To further minimize impacts, use of renewable energy, such as solar photovoltaic energy, solar hot water, district energy steam, and electric plug-ins for trains are under consideration by MassDOT/MBTA.
Aesthetics and Design Quality	• Improves viewshed along Dorchester Avenue and across Fort Point Channel through removal of USPS facility and introduction of landscaping, pedestrian and cycling facilities, and expanded headhouse. • Does not impact other views as the height of the proposed structures is lower than existing structures. • Includes a headhouse expansion with a prominent entrance along Dorchester Avenue that respects the primary historic entry at Dewey Square.	• No mitigation required.
Transportation	• No significant impacts. • Increases ridership. • Improves pedestrian circulation and enhances the pedestrian experience. • Increases pedestrian flow on Silver Line and Red Line platforms. • Improves or retains Level of Service (LOS) at most impacted intersections. • Relieves curbside congestion on Atlantic Avenue. • Improves bicycle infrastructure.	• Roadway, bicycle, and pedestrian improvements will be implemented at eight signalized intersections.

Environmental Resource	Potential Impacts of the Build Alternative	Proposed Mitigation
Possible Barriers to Handicapped and Elderly	• Complies with the Americans with Disabilities Act (ADA) of 1990 and Massachusetts Architectural Access Board (MAAB) regulations. • Provides adequate space and appropriate facilities to safely and conveniently manage the projected peak-hour pedestrian demand. • Complies with current egress capacity and travel distance requirements.	• No mitigation required.
Land Use and Zoning	• Requires acquisition of the USPS property, a parcel adjacent to 245 Summer Street, land and right-of-way at the Widett Circle site, and land adjacent to Readville – Yard 2.[13] • Includes the reopening of Dorchester Avenue. • Is consistent with local zoning and other local planning and development plans.	• Footprints required to support site functions will be minimized. • Property acquisitions and relocations will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, 42 USC 4601; CFR 49 Part 24 and/or Massachusetts General Law (M.G.L.) 79A. • Fair market values will be paid for property acquisitions. • Impacts to Department of Public Works operations near Widett Circle will be minimized.
Socioeconomic	• Provides approximately 200 new permanent jobs at South Station. • Supports the continued economic growth and expansion of the Downtown Financial District and adjoining South Boston Waterfront/Innovation District. • Results in the relocation of approximately 1,000 USPS jobs. • Displaces approximately 30 private businesses currently operating at the Widett Circle layover facility site.	• As discussed for Land Use and Zoning, required relocation assistance and compensation would be provided for affected property owners.
Environmental Justice	• Benefits environmental justice (EJ) populations that use the station by providing improved transportation facilities and additional areas of open space, including the new Harborwalk on Dorchester Avenue.	• No mitigation required.

[13] As described in Chapter 1 and Appendix B, the SSX project involves acquisition and demolition of the USPS GMF located on Dorchester Avenue adjacent to South Station, which would provide an approximately 14-acre site on which to expand South Station. Although demolition of the USPS facility after it is vacated is part of the SSX project, the relocation of USPS operations is not part of this project. For the purposes of this assessment of indirect effects, it is assumed that the USPS GMF could be relocated to a site in South Boston on the Reserved Channel in Boston's Seaport District (Figure 1 of Appendix B) that the USPS had previously identified as potentially being appropriate to accommodate a relocated USPS GMF. The USPS would determine the future location(s) to which its operations would be relocated, and the relocation would be subject to its own environmental review as required by state and federal regulations as a separate project. The actual relocation of the USPS GMF would be subject to negotiations between the USPS and MassDOT/Commonwealth of Massachusetts.

Environmental Resource	Potential Impacts of the Build Alternative	Proposed Mitigation
Public Health and Safety	• Improves passenger, traffic, pedestrian, and bicycle safety. • Minimizes surveillance problems.	• The following will be prepared and implemented: a Safety and Security Program Plan (SSPP), a Preliminary Hazard Analysis, a Threat and Vulnerability Assessment, a Preliminary Safety and Security Design Criteria Manual, and site specific Health and Safety Plans. • Phase II Environmental Site Assessments will be completed. • Asbestos-Containing Materials (ACM) and hazardous materials will be identified prior to demolition.
Parks and Recreational Areas	• Provides significant benefits and recreational opportunities associated with reopening Dorchester Avenue, including a cycle track, Harborwalk extension, and increased access to the Rolling Bridge Park and the Fort Point Channel waterfront. • Has no adverse impacts on parks and recreation areas in the vicinity of the project sites.	• No mitigation required.
Cultural Resources/ Section 106	• Improves views to and from the Fort Point Channel Historic District. • With mitigation, has Conditional No Adverse Effect on historic properties. • Contains no archaeologically sensitive sites.	• Implementation of a Construction Management Plan (CMP)/Noise Control Plan. • Construction of noise barrier at South Station. • Rehabilitation of Fort Point Channel seawall along Dorchester Avenue and expansion of South Station, consistent with project Design Principles, Secretary of the Interior's Standards for Rehabilitation, and guidelines for new construction. • MHC and other Section 106 consulting parties review of 30% and 60% design plans.
Construction Period Impacts	• No significant construction impacts. • May temporarily impact rail service. • May temporarily disrupt traffic and increase congestion. • May cause temporary dust emissions, direct emissions, noise, and vibration from construction equipment, and indirect emissions from vehicles. • Impacts from potential exposure to contaminated soils, debris, or groundwater during construction. • Provides permanent employment within South Station and in system-wide rail-related employment, as well as temporary construction jobs.	• Prepare and implement the following: a construction phasing schedule that balances duration and impact by optimizing overnight work windows, weekend work outages, and strategic track closures; a CMP; a SWPPP; a Dust and Emissions Control Plan; a Construction Noise Control Plan; appropriate soil management procedures; and Soil Erosion and Sediment Control measures. • MassDOT's and City of Boston's specifications for traffic management requirements and work hour provisions will be followed.

Environmental Resource	Potential Impacts of the Build Alternative	Proposed Mitigation
		• Vibration levels will be monitored at the project sites during construction and any needed mitigation measures will be facilitated. • Provisions in the BWSC Stormwater Permit and MWRA 8(m) Permit will be followed. • Soil erosion and sediment controls for construction activity proximate to wetland resources will be implemented. • MassDOT/MBTA will prepare an unanticipated discoveries plan prior to construction to address the possibility of encountering previously undocumented archaeological resources during construction. • MassDOT/MBTA will continue to work with all relevant agencies, utilities, and project stakeholders as appropriate agencies to identify necessary permits. • MassDOT/MBTA will continue coordination with Massport throughout design and construction to minimize construction impacts to airspace, and to identify necessary permits. • MassDOT/MBTA will continue to coordinate with MWRA and BWSC during subsequent design phases and will provide data on the existing sewer system performance and sewer model results from existing and proposed (Build) conditions after it has been collected. • MassDOT/MBTA will continue to coordinate with MWRA during subsequent design phases on the I/I plan, particularly with regard to the CSO outfalls in the vicinity of the SSX project. In addition, there are other projects planned in the area that may impact the I/I plan and MassDOT/MBTA will continue coordination with those projects to ensure all future flows are mitigated accordingly. • MassDOT/MBTA will comply with 360 C.M.R. 10.016 (State Sewer Use Code for Gas/Oil Separators), as well as 248 C.M.R 2.00 (State Plumbing Code), and all other applicable laws.

Environmental Resource	Potential Impacts of the Build Alternative	Proposed Mitigation
		• MassDOT/MBTA will contact the Toxic Reduction and Control (TRAC) Department to obtain an inspection for each facility prior to obtaining approval from MWRA and the Local Plumbing Inspector. • MassDOT will continue coordination with all relevant parties and agencies in advancing the USPS relocation and other relevant transportation improvements in the Waterfront area. • MassDOT/MBTA will continue to coordinate with Fidelity Investments throughout the next stages of design to: 1) review loading dock operations at 245 Summer Street; 2) discuss the reopening of Dorchester Avenue and any necessary removal of Fidelity's patio and adjacent subsurface elements; 3) discuss maintaining points of egress during construction; 4) discuss design of the noise wall; 5) develop a more detailed geotechnical analysis of the South Station and USPS sites; and 6) develop a construction management plan (CMP) for the reconstruction of the portion of the seawall along Dorchester Avenue. • MassDOT/MBTA will continue to coordinate with the City to help realize a future development vision for both South Station and Widett Circle during construction.

5. Project Funding and Schedule

Upon completion of preliminary design, MassDOT will develop an estimate for cost of construction. MassDOT would use the estimate to evaluate both funding mechanisms and procurement methods available. FRA and MassDOT have not identified funding for construction of the SSX project. Project funding is anticipated to be provided in the future by federal and state and possible private funding sources. Once funding is identified and secured, a project construction schedule can be determined.

MassDOT anticipates that construction work at the South Station site and layover facility sites could advance independently. As shown in Figure S-5, the anticipated four and a half-year construction schedule at South Station starts with demolition of the USPS facility followed by reconstruction of Dorchester Avenue, construction of rail infrastructure components, and the headhouse expansion. At the layover facilities, site preparation and demolition would be followed by rail infrastructure modifications and installation, and construction of roads, walkways, lighting, and utilities. Figure S-5 shows the layover facility construction taking approximately one and a half years and occurring subsequent to completion of other project elements, but the layover facility construction could occur at any point after Year 3 Q2. As shown below, construction of the project would begin upon completion of final design and advertisement/award.

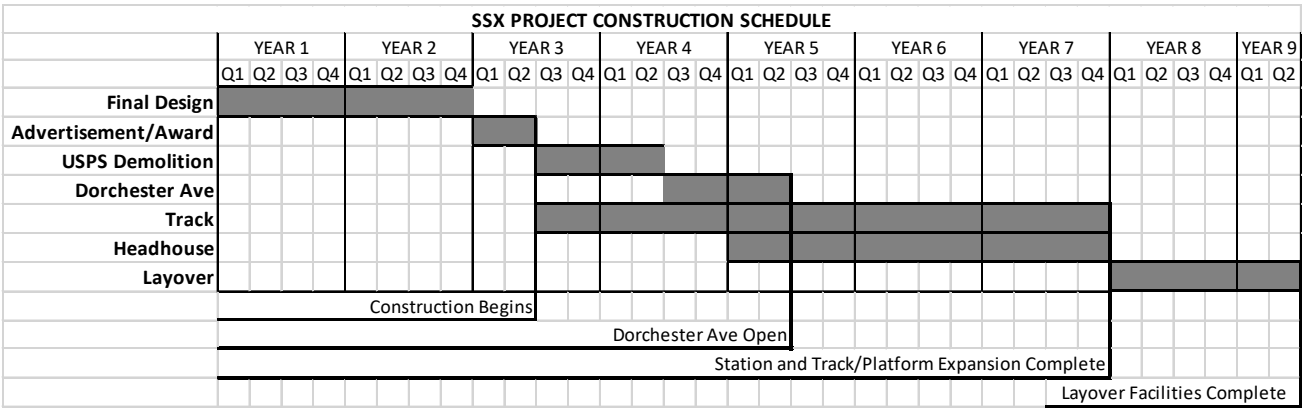

Figure S-5 – Proposed Construction Sequencing

6. Public Involvement

MassDOT is committed to reaching out to the public, including EJ populations. The SSX project received public input throughout the planning process to plan and develop the project in coordination with a range of interests. Stakeholders include transit passengers; community and business groups in abutting neighborhoods; pedestrians and bicyclists; and city, state, and federal government agencies. Methods for engaging the public included holding public information meetings, open houses and briefings; outreach efforts to EJ and Title VI populations; establishment of a project website; distribution of email and print notices; development of brochures, fact sheets, surveys, and presentations; social media postings; technical coordination meetings; and regional media publications.

Chapter 5 describes the project's Public Involvement Plan (PIP), which lays out specific strategies for implementing MassDOT's outreach goals. MassDOT continues to implement its public outreach program outlined in the PIP, which is provided along with all other project documents on the project website at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

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Chapter 1 – Introduction, and Purpose and Need

The Massachusetts Department of Transportation (MassDOT), the Massachusetts Bay Transportation Authority (MBTA), and the National Railroad Passenger Corporation (Amtrak) have for decades identified the expansion of rail and passenger capacity at South Station as a crucial transportation need, one that is articulated in multiple local, regional, state, and Northeast Corridor (NEC)-wide planning documents. The Federal Railroad Administration (FRA), in conjunction with MassDOT, the MBTA, and Amtrak, is studying the expansion of South Station through this Environmental Assessment (EA). Historic South Station is a critical component of transportation infrastructure for the City of Boston and the Boston metropolitan area, and is the second busiest transportation center in New England, after Logan International Airport. Although expansion of South Station is a critical component for the region, it also plays an important role for the entire Northeast. The improvements recommended in this document will address travel needs as identified for the year 2035. However, to accommodate the goals for travel throughout the NEC for 2040 and beyond will require additional investments at South Station, beyond those proposed and examined as part of this project, but will build on the necessary improvements accomplished through this project.

As shown on Figure 1-1, the South Station Expansion (SSX) project consists of the 49-acre site located in and around the existing South Station Transportation Center, which consists of the South Station Rail/Transit Terminal, South Station Bus Terminal, and existing United States Postal Service (USPS) property and adjacent roadways. The SSX project would expand South Station Rail Terminal capacity, improve service reliability, and provide related layover capacity in order to meet current and future (2035) high-speed, intercity, and commuter rail service needs. The SSX project consists of four primary components (presented in order of the proposed construction sequence):

- Acquire and demolish the USPS facility;
- Reopen Dorchester Avenue and extend the Harborwalk;
- Expand the South Station Terminal; and
- Construct rail layover facilities.

1.1. Project Background

FRA created the High Speed Intercity Passenger Rail Program (HSIPR) to allocate funds to programs aimed at developing new high-speed or intercity passenger rail services or substantially upgrading existing corridor services. FRA awarded a $32,500,000 HSIPR grant in 2011 to complete state and federal environmental reviews and preliminary engineering for the SSX project. The Massachusetts Environmental Policy Act (MEPA) environmental review process for this project concluded with the issuance of a final Certificate on August 12, 2016, on the Final Environmental Impact Report (FEIR). In order to utilize federal funds, the project also requires review under the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] 4321 et seq.). FRA and MassDOT (the Project Team) have prepared this EA pursuant to NEPA, the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and FRA's *Procedures for Considering Environmental Impacts* (64 Federal Register [FR] 28545 [May 26, 1999] and 78 FR 2713 [January 14, 2013]).

The USPS, the Federal Transit Administration (FTA), the Federal Highway Administration (FHWA), and Amtrak participated in the NEPA process as Cooperating Agencies. Amtrak has been involved in the project since 2013 as an official project stakeholder, as well as a cooperating agency for the NEPA process. Amtrak has a significant presence at South Station and the Project Team has engaged them throughout the project via recurring meetings and workshops.

This EA identifies a No Build Alternative and a Build Alternative; provides an assessment of effects on the natural and built environment for both the No Build Alternative and Build Alternative; and identifies measures to avoid, minimize, or mitigate any negative effects. A horizon year of 2035 and an approximate opening year of 2025 are used for analysis of the SSX project.

1.2. Project Context

1.2.1. South Station Passenger Services

South Station is the northern terminus of the current NEC as defined by Amtrak and the eastern terminus of Amtrak's Lake Shore Limited service, and is the sixth busiest station in the national Amtrak system and the fourth busiest station on the NEC.[1] Approximately 1.57 million Amtrak passengers traveled through South Station in 2016.[2] From 2003 to 2016, the number of Amtrak passenger arrivals and departures through the Station increased by approximately 61%, demonstrating the growing demand for rail transportation within the NEC region.[3] In fiscal year (FY) 2016, on the NEC (which runs from Boston to Washington, D.C.), Amtrak carried 11.9 million passengers via Acela Express and Northeast Regional service.[4] In addition to Amtrak services, the MBTA manages and runs the fifth largest commuter rail system in the nation, which terminates its south side services at South Station. The south side portion of the MBTA's commuter rail system that terminates at South Station serves central and southeastern Massachusetts.

Weekday ridership at South Station in 2013 included an average of approximately 4,100 combined Amtrak boardings and alightings, and 42,000 combined MBTA commuter rail boardings and alightings, for a total of more than 46,000 combined intercity and commuter rail boardings and alightings daily.[5] South Station also provides connections to the MBTA Red Line, the transit spine for communities north and south of Downtown Boston; to Logan International Airport via the MBTA Silver Line; and to intra- and inter-city bus services via nine MBTA bus routes and 11 private bus companies operating out of South Station's Bus Terminal. The SSX project will improve connectivity between the Bus Terminal and the Rail Terminal, but the expansion focuses primarily on the Rail Terminal.

[1] Amtrak Media Relations. *State of Massachusetts Fact Sheet: Fiscal Year 2016*. November 2016.

[2] Amtrak Government Affairs. *Amtrak Fact Sheet, Fiscal Year 2016, State of Massachusetts*. November 2016.

[3] Amtrak Government Affairs. *Amtrak Fact Sheets 2003-2007, 2010-2012, 2015, 2016 State of Massachusetts*; Amtrak Media Relations. N*ational Fact Sheets: Fiscal Years 2008 and 2009.*

[4] Amtrak Media Relations. Amtrak Fiscal Year 2016 Ridership (October 2015 to September 2016, preliminary and unaudited figures). November 17, 2016. http://media.amtrak.com/2016/11/amtrak-delivers-strong-fy-2016-financial-results/

[5] Massachusetts Department of Transportation. South Station Expansion Project, *Draft Environmental Impact Report. Appendix 9 (Part 3) Final South Station Expansion Project Ridership Results, Base Year Pedestrian Transfer Matrices*. October 2014.

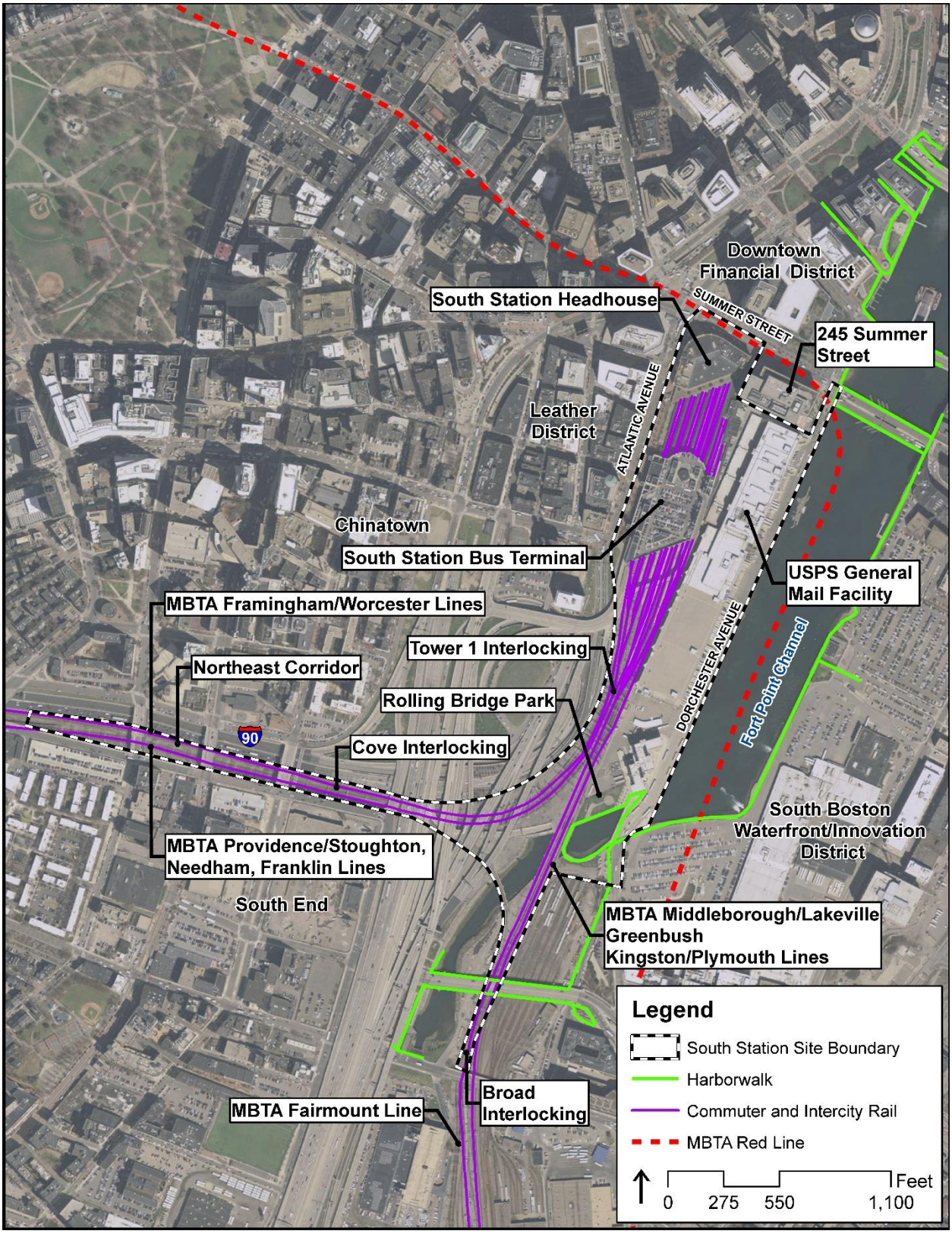


Figure 1-1 — South Station Site – Existing Conditions

South Station was originally constructed in 1899 with 28 total tracks. As a result of various redevelopment projects, including co-location with the USPS in the 1930s, South Station today has fewer than half the original number of tracks, but it continues to serve as the most heavily used passenger rail facility in New England. Currently, all 13 existing tracks are fully used by Amtrak and the MBTA, and both operators are limited in their ability to increase service or offer new services due to the constrained size and configuration of the station and terminal facilities. The terminal facilities are constrained by natural geography (Fort Point Channel) as well as significant infrastructure including: the existing South Station headhouse; the Interstate Highway 90/Massachusetts Turnpike (I-90) tunnels and ramps; the Interstate Highway 93 (I-93) and ramps; the Central Artery/Tunnel vent buildings; and the MBTA Red Line. South Station's passenger facilities, including platforms, waiting areas, and customer support services, do not meet current design standards for passenger transit facilities and passenger circulation. As a result of these deficiencies, South Station is experiencing increasing congestion, contributing to declining service reliability of intercity passenger and commuter rail operations, as well as losing opportunities for expanding existing passenger rail services and adding new services in response to growing demand in the Northeast.

1.2.2. Existing Station Description

South Station is located near Chinatown, the Leather District, Fort Point Channel, the South Boston Waterfront/Innovation District, and the Financial District. The approximate 49-acre site includes the South Station Rail/Transit Terminal, South Station Bus Terminal, existing USPS property, Dorchester Avenue, and adjacent roadways. The South Station Rail Terminal area consists of 13 tracks, eight platforms, and a system of trackwork (also referred to as interlockings[6]) that allow Amtrak and MBTA trains to serve the station from the NEC, the Framingham/Worcester Line from the west, and the MBTA's Fairmount Line and Old Colony Line from the south and east. There are nine main line approach tracks that currently converge into the South Station terminal area. Of these nine tracks, five arrive at South Station from the west on NEC Main Line Tracks 1, 2, and 3 and the Framingham/ Worcester Line Tracks 5 and 7. The remaining four tracks arrive at South Station from the south and consist of the Fairmount Line and the Old Colony Line. Amtrak and the MBTA currently utilize one main and two approach interlockings for routing trains into and out of South Station. The three South Station interlockings, in order from closest to most distant from South Station, are as follows: Tower 1, Cove, and Broad Interlockings. Other components of the rail system are signal systems, traction power, overhead contact system (OCS), communications, and civil works as well as appurtenant structures. Figure 1-1 and Figure 1-2 present the existing South Station site, including terminal, approach interlockings, and key facilities.

[6] An interlocking is a segment of railroad infrastructure comprised of track, turnouts, and signals linked (interlocked) in a way that allows trains to move from one track to another, or across tracks safely, preventing conflicting train movements. The interlockings enable train dispatchers to route incoming trains over a variety of tracks to/from available station tracks.

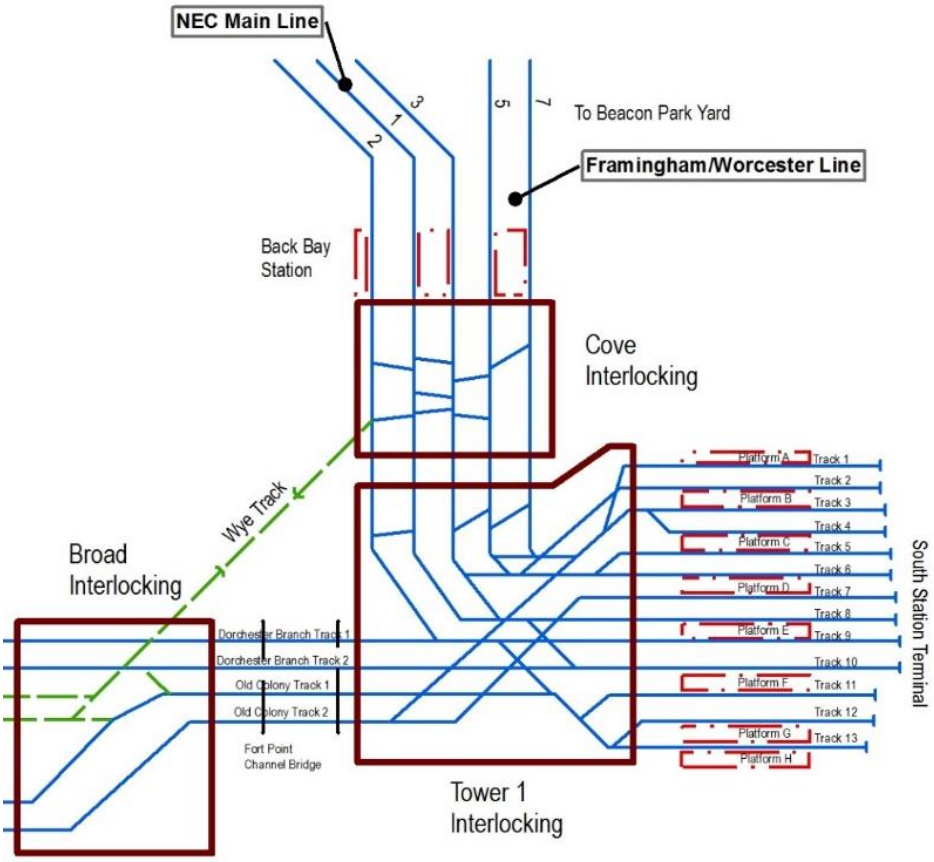


Figure 1-2 — Schematic of South Station Terminal and Interlockings

1.2.3. South Station Development History

South Station opened to the public on New Year's Day, 1899. Today, South Station is the second largest transportation facility in New England (second only to Logan Airport), but is substantially smaller than its original size. Prior to the construction of South Station, passenger railroads serving Boston and New England had their own passenger terminals within Boston. In 1896, the Boston Terminal Company consolidated five railroad lines into one terminal, to be known as "South Union Station."

South Station is Boston's first and now only remaining public example of the Classical Revival Style architecture. With the post-war rise of the automobile and a decline in rail travel, the headhouse fell into disrepair by the 1960s, and was proposed for demolition. Large sections of the east and west wings were demolished in the early 1970s for construction of the 245 Summer Street building for Stone & Webster; for expansion of the USPS General Mail Facility (GMF) on Dorchester Avenue; and for construction of a bus depot on Atlantic Avenue. Only the central portion of the original station remains. In 1975, the headhouse was placed on the National Register of Historic Places and efforts were made to restore the building. The MBTA bought South Station from the Boston Redevelopment Authority (BRA) (now the Boston Planning and Development Agency or BPDA) in 1978. Working with FRA and Amtrak, the MBTA undertook a major renovation of South Station in the 1980s that resulted in the station that exists today. In 1995, the MBTA also completed work on an intercity Bus Terminal adjacent to and above the Rail Terminal, with direct connections to I-93 and I-90.

Prior to the expansion of South Station proposed in this project, MassDOT anticipates that the improvements contemplated in the planned South Station Air Rights (SSAR) project will already be incorporated into the site. The SSAR project consists of approximately 1.8 million square feet of mixed-use development to be located directly above the railroad tracks and the existing South Station headhouse. The SSAR project would also include expansion of the existing Bus Terminal towards the existing headhouse. The Massachusetts Secretary of the Executive Office of Energy and Environmental Affairs (EEA) reviewed the SSAR project in 2006. The developer filed a Notice of Project Change (NPC) with the EEA and the Boston Redevelopment Authority (now known as the Boston Planning and Development Agency [BPDA]) in 2016 and received a Certificate from the Secretary of EEA on that NPC on October 7, 2016[7] and received BPDA Board Approval on December 15, 2016. The changes were primarily the adjustment of the proportion of residential and commercial use and also touchdown points of the overbuild. None of the changes proposed present a significant impact to the SSX project. Although construction of the SSAR project has not yet begun, the Project Team has assumed the SSAR project to be an existing condition and part of the SSX project's No Build Alternative. Coordination between MassDOT and the SSAR project proponent will continue as engineering and design of each project advances. Construction of the SSAR project is anticipated to commence in 2018.

1.2.4. Planning Context

The proposed expansion of South Station has long been considered in federal, state, regional, and local planning and has been cited in documents dating back to 2002.[8] According to the NEC Commission, major investment in the NEC is essential to reduce delays, achieve a state-of-good-repair, and build capacity for growth.[9] The Commission cites the need to expand South Station as one of the critical infrastructure needs of the NEC.[10] Existing South Station operations are near capacity during the peak periods[11] and even minor delays can create cascading delays from which the terminal operation cannot recover until well after the peak periods.

FRA is advancing the NEC FUTURE program concurrent and in coordination with the SSX project. FRA is currently working with NEC stakeholders to develop a long-range, integrated investment plan for the NEC between Washington, D.C., and Boston, Massachusetts. The purpose of the NEC FUTURE program is to create a vision for the NEC that upgrades aging infrastructure and improves the reliability, capacity, connectivity, performance, and resiliency of future passenger rail service on the NEC for both intercity and regional trips, while promoting environmental sustainability and continued economic growth. Through the NEC FUTURE program, FRA identified and analyzed a broad program of service and infrastructure improvements documented in the Tier 1 EIS. FRA released the Record of Decision in July 2017, which documents the selected alternative to be implemented, and a Service Development Plan (SDP), which provides additional details on the business case and phasing plan for implementing the selected alternative.

[7] The South Station Air Rights Project Notice of Project Change received a Certificate from the Secretary of EEA on October 7, 2016. http://209.80.128.250/EEA/emepa/mepacerts/2016/sc/npc/3205%20-9131%20NPC3%20South%20Station%20Air%20Rights%20Boston.pdf

[8] Documents citing the need for an expanded South Station include: *Critical Infrastructure Needs on the Northeast Corridor* (2013), *The Northeast Corridor Infrastructure Master Plan* (2010), *A Amtrak Vision for High-Speed Rail in the Northeast Corridor* (2010), *The Amtrak Vision for the Northeast Corridor* (2012), the *Massachusetts Department of Transportation Rail Plan* (2010), the *Massachusetts Department of Transportation Freight Plan* (2010), and the two most recent long range transportation plans of the Boston Region Metropolitan Planning Organization (MPO) (2007, 2011).

[9] The NEC Commission was created by Congress in order to coordinate, finance, and implement major systems improvements for the NEC. The Commission is comprised of members from each of the NEC states, Amtrak, and the United States Department of Transportation (U.S. DOT), with non-voting representatives from freight railroads and states with connecting corridors. http://www.nec-commission.com

[10] NEC Infrastructure and Operations Advisory Commission. *Critical Infrastructure Needs on the Northeast Corridor.* January 2013.

[11] Approximate AM peak period is 6:30 – 9:00. Approximate PM peak period is 3:30 – 6:30.

FRA used a 2040 horizon year for making ridership projections and determining future travel conditions when developing alternatives and conducting the analysis in the NEC FUTURE program; here, the Project Team is developing the SSX project based on a 2035 horizon year. In order for South Station to accommodate the 2040 service levels in the NEC FUTURE Preferred Alternative, additional infrastructure improvements beyond those proposed in this SSX project would need to occur at South Station as well as throughout the NEC. The SSX project will not preclude the improvements proposed by the NEC FUTURE program; rather, the SSX project includes investments that can later be leveraged by MassDOT and FRA to initiate the additional improvements proposed by the NEC FUTURE program to accommodate service levels beyond 2035. The selected alternative FRA identified in the Tier 1 Record of Decision for the NEC FUTURE program (see www.necfuture.com for the NEC FUTURE Record of Decision) will be implemented incrementally and in coordination with the phasing of the SSX project. MassDOT will continue to work with FRA to accommodate the projected service and any additional infrastructure improvements included in the NEC FUTURE selected alternative.

1.3. Purpose

The purpose of the SSX project is to expand South Station Rail Terminal capacity and related layover capacity to meet current and anticipated future (2035) high-speed, intercity, and commuter rail service needs that will:

- Enable growth in passenger rail transportation along the NEC and within the Commonwealth of Massachusetts;
- Improve service reliability through updates to rail infrastructure and related layover capacity;
- Improve the passenger capacity and experience of using South Station;
- Promote city-building in a key area of Boston; and
- Allow for Dorchester Avenue to be reopened for public use and enjoyment for the first time in decades.

1.4. Need

There are three fundamental transportation deficiencies (system needs) that the project intends to address to improve both current and future railroad operations:

- Terminal capacity constraints;
- Inadequate station facilities; and
- Insufficient layover space.

1.4.1. Terminal Capacity Constraints

Current South Station Terminal capacity constrains existing service reliability and limits opportunities to expand intercity passenger rail and commuter rail services. Terminal capacity infrastructure constraints currently degrade service reliability and will inhibit future service delivery. One of the goals of the SSX project is to reduce the constraints at the terminal in order to improve service reliability. In order to achieve the project goals, MassDOT needs to acquire the adjacent USPS property, demolish the USPS GMF, and expand the Rail Terminal onto that property.

Infrastructure Constraints

Recurring train delays at the South Station Terminal area are directly attributable to the limited number of platform tracks and the configuration(s) of the track infrastructure (one main and multiple approach interlockings). As South Station is a terminal facility, every arriving train must reverse to leave the station as a new revenue trip or to access a layover facility. Every arriving trip is followed by a departing trip, further limiting station capacity. Figure 1-2 shows the existing platform configuration as well as the layout of existing Tower 1, Cove, and Broad Interlockings.

Constraints associated with the interlockings near or at South Station include:

- **Tower 1 Interlocking,** South Station's main interlocking located immediately south of the terminal, consists of nine main line approach tracks converging into 13 station tracks and eight platforms. Today, all trains enter or exit the station through Tower 1 Interlocking. Tower 1 Interlocking contains two long ladder tracks, tracks that link a series of parallel tracks, which allow a train approaching South Station on any track to reach nearly every platform. Although this layout provides operational flexibility, it creates a bottleneck for Amtrak and MBTA operations by limiting the number of trains that can simultaneously move through the interlocking. For example, a train approaching from the west that is destined for an easterly platform track will block other trains from entering or exiting South Station, disrupting those trains and causing delay-inducing congestion.
- **Cove and Broad Interlockings** are two approach (or "setup") interlockings, located west and south of Tower 1 Interlocking. Cove Interlocking, located approximately 0.5 miles from South Station on the NEC and Framingham/Worcester lines, serves as a universal interlocking[12] for four of the five tracks approaching South Station, meaning trains can be rerouted to other tracks in both directions. Broad Interlocking, located adjacent to the MBTA's South Side Service and Inspection Facility, provides limited access between the MBTA Fairmount and Old Colony mainline tracks and does not allow universal access to all tracks in both directions. As a result of the limitations at both Cove and Broad Interlockings, moves that could take place outside of the South Station terminal area to "set up" trains for appropriate tracks entering the station must instead take place within the Tower 1 Interlocking area. This lack of operational flexibility outside of the terminal area increases the number of conflicting movements at the already constrained Tower 1 Interlocking and further increases congestion, inefficiency, and delays for trains and passengers.

Infrastructure modifications are needed to allow additional and more efficient train movements at the South Station Terminal interlockings. By making improvements at Broad Interlocking, conflicting train movements can be moved to areas outside the terminal that accommodate higher speeds, operations at Tower 1 Interlocking and into South Station would be improved, and flexibility of train movements within the station would be improved. These infrastructure improvements would allow for an operating plan that provides for faster and more efficient crossover moves in preparation for station platform berthing, and would reduce congestion at Tower 1 Interlocking. The layout would also continue to provide the operational flexibility needed in the event of an emergency or equipment failure.

Service Reliability Issues

Service reliability at South Station, measured by on-time performance (OTP) and delay, is adversely impacted by chronic terminal congestion.[13] Due to the interconnectedness and complexity of service at

[12] A universal interlocking allows for the safe movement of trains from track to track in either direction.

[13] OTP is calculated as a percentage measure of train performance, by taking the total number of trains arriving "on-time" at the end-point of a run divided by the total numbers of trains operated on the run.

South Station (as described above), individual train delays not only directly impact overall station operations, but also produce cascading effects upon service line operations.

Service reliability is an important factor in a traveler's mode choice decision.[14] To continue to offer NEC travel market consumers a safe,[15] energy-efficient,[16] and reliable transportation choice, FRA and Amtrak have established OTP goals for NEC intercity passenger rail service. Amtrak's service delivery policy goal is 95% OTP for Acela Express and 90% OTP for Northeast Regional services.[17] Amtrak regional trains are considered late if they arrive at their end-point terminals more than ten minutes after their scheduled arrival times for trips of up to 250 miles, with a tolerance of an additional five minutes per additional 100 miles. All Acela trips, regardless of run length, are considered late if they arrive at their endpoint terminal more than ten minutes past their scheduled arrival time.

Table 1-1 presents Amtrak's OTP trends from FY2008 through FY2015.[18, 19] Over this eight-year period, the OTP ranges for both Amtrak's Acela Express service (71 to 90%) and its Northeast Regional service (75 to 87%) were consistently below the OTP goals of 95 and 90%, respectively.

The MBTA has a stated goal of 95% OTP for all commuter rail service, meaning that 95% of all commuter rail trips are operated within five minutes of scheduled trip time over the entire service day.[20] Table 1-2 presents the MBTA's OTP trends from 2008 through 2015.[21] MBTA commuter rail service OTP over this eight-year period fluctuated, ranging from approximately 82% to 94%.

Table 1-1 — Amtrak NEC Service On-Time Performance Trends

Fiscal Year (10/1- 9/30)	On-Time Performance	
	Acela Express	Northeast Regional
2008	84.5%	75.8%
2009	87.2%	80.0%
2010	80.6%	74.7%
2011	84.0%	79.1%
2012	89.7%	86.5%
2013	85.5%	84.2%
2014	74.8%	75.2%
2015	70.9%	75.2%
2015 Goal	*95.0%*	*90.0%*

[14] TRB Record 794, Household Activities and Consumer Perspectives. *Understanding the Effect of Transit Service Reliability on Work-Travel Behavior*. 1981.

[15] Motor vehicle accidents or highway fatalities are responsible for the largest share (93 percent) of transportation-related deaths. Centers for Disease Control, National Vital Statistics Reports (Volume 60, Number 4), Deaths: Preliminary Data for 2010 (Jan. 11, 2012), as of June 2012.

[16] Intercity rail is a proven energy efficient mode of travel. Oak Ridge National Laboratory Transportation Energy Data Book 33, Table 2.12.

[17] Federal Railroad Administration. Metrics and Standards for Intercity Passenger Rail Service. Page 26. https://www.fra.dot.gov/eLib/Details/L02875.

[18] Federal Railroad Administration. Quarterly Reports on the Performance and Service Quality of Intercity Passenger Train Operations, 2011-2015. https://www.fra.dot.gov/Page/P0532.

[19] Federal Railroad Administration. *Amtrak On-Time Performance (OTP) Reports,* provided to The Committee on Appropriations, United States Senate. December 17, 2008; December 29, 2009; January 21, 2011.

[20] Massachusetts Bay Transportation Authority. *Service Delivery Policy*. June 2, 2010. www.mbta.com/uploadedfiles/About_the_T/T_Projects/T_Projects_List/2010ServiceDeliveryPolicy.pdf

[21] Massachusetts Bay Transportation Authority. *Commuter Rail OTP 2008-2012*. Personal communication. June 20, 2013.

Table 1-2 — MBTA Commuter Rail Service On-Time Performance Trends

Year	On-Time Performance[a]
2008	81.7%
2009	88.7%
2010	85.8%
2011	87.0%
2012	93.3%
2013	93.8%
2014	92.6%
2015	84.2%
Annual Goal	*95.0%*

[a] OTP is not adjusted for approved delays, including maintenance delays.

As shown in Table 1-1 and Table 1-2, neither Amtrak nor the MBTA achieved their stated goals for OTP. While the statistics shown are based on systemwide or route services and are not specific to South Station only, existing operations are at or near capacity during the peak periods and even minor delays can create cascading delays from which the terminal operation cannot recover until well after the peak periods. Continued delays at South Station will further exacerbate both Amtrak and the MBTA's ability to meet their OTP goals.

Future Service Demands

South Station is a key gateway linking Downtown Boston and the emerging South Boston Waterfront/Innovation District. With recent growth in the area, including the addition of General Electric Co. headquarters and other economic development opportunities in the area, there is an increased demand for improved transportation services, specifically at South Station. The substantial land use growth projected for the South Boston Waterfront translates to approximately 9,200 new residents and 22,900 new jobs in the Waterfront by 2035.[22] At a regional level, travel demand is expected to grow faster than the 14% population growth rate anticipated by 2025.[23]

By the year 2035, Amtrak projects that daily intercity rail ridership at South Station could be approximately 5,500 combined boardings and alightings (2035 No Build), representing an approximate 35% growth in ridership.[24] The Central Transportation Planning Staff (CTPS) of the Boston Region Metropolitan Planning Organization (MPO) projects South Station MBTA commuter rail daily boardings and alightings in the year 2035 to be approximately 56,000 (2035 No Build). Therefore, the combined Amtrak and MBTA commuter rail ridership in 2035 is projected to increase to more than 61,000 daily boardings and alightings. In 2012, there were 46,000 combined daily boardings and alightings for Amtrak and commuter rail. [25]

[22] A Better City, *South Boston Waterfront Sustainable Transportation Plan*, January 2015: https://www.massdot.state.ma.us/Portals/17/docs/Studies/SBostonWaterfrontFullReport_jan2015.pdf.

[23] Amtrak. *Northeast Corridor Infrastructure Master Plan*. June 4, 2010. http://www.amtrak.com/ccurl/870/270/Northeast-Corridor-Infrastructure-Master-Plan.pdf.

[24] *Ibid.*

[25] Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report, Appendix 9 (Part 3), Ridership Forecasting Technical Report*. October 2014. All results rounded to nearest 100, except for Commuter Rail results, which are rounded to the nearest 1,000.

Weekday operations in 2013 at South Station included 40 Amtrak intercity and 280 MBTA revenue trips and 32 Amtrak intercity and 97 MBTA non-revenue trips,[26] for a total of 449 daily train movements at the terminal. By the year 2035, 80 weekday intercity (Amtrak and New England Regional)[27] revenue trips and 58 weekday non-revenue trips are anticipated, representing a 100% revenue service increase above current levels. By 2035, the MBTA projects 315 weekday revenue trips and 101 weekday non-revenue trips, representing a 13% revenue service increase above current levels. A total of 554 daily train movements in and out of South Station is projected by the year 2035, representing an increase of 23% above current revenue service levels.[28] Table 1-3 provides a breakdown of the existing and projected 2035 daily revenue trips for MBTA and intercity services, by route, at South Station. Table 1-4 provides a breakdown of the existing and projected 2035 daily non-revenue trips for MBTA, and intercity services, by route, at South Station.

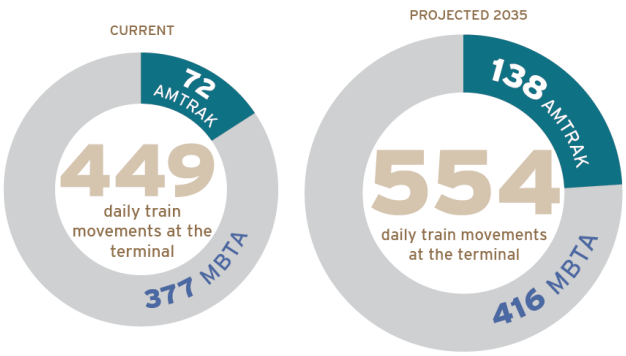


Table 1-3 — Existing and Projected 2035 Daily Revenue Trips at South Station

Service Route	Existing (2013) Daily Revenue Trips		Future (2035) Daily Revenue Trips	
	Inbound	Outbound	Inbound	Outbound
MBTA				
Framingham/Worcester	22	21	22	22
Needham	16	16	17	17
Franklin	19	18	20	18
Providence	18	18	19	19
Stoughton (existing service)/ *New Bedford/Fall River (future service)*	16	16	*20*	*20*
Fairmount	14	14	24	25
Middleborough/Lakeville	12	12	12	12
Kingston/Plymouth	12	12	12	12
Greenbush	12	12	12	12
Total	**141**	**139**	**158**	**157**
Intercity				
Amtrak Acela	10	10	14	14
Amtrak Regional	9	9	9	9
Amtrak Regional via Inland	-	-	4	4
Amtrak Lake Shore Limited via Inland	1	1	1	1
New England Regional via Inland	-	-	12	12
Total	**20**	**20**	**40**	**40**

Sources:
(Existing Revenue Trips) MBTA Schedules and Equipment Cycle Effective April 23, 2013, and Amtrak Schedules Effective January 14, 2013.
(Future Revenue Trips) Northeast Corridor Intercity Service Alternative: "B-Low 2020-2030" operating plan provided by Amtrak on November 11, 2013.
Massachusetts Department of Transportation, *South Station Expansion Project, Final Environmental Impact Report,* Appendix E, Rail Operations Analysis Technical Report, June 2016.

[26] Non-revenue is a railroad industry term used to describe the movement of equipment and/or crews between locations when trains are not in revenue service (such as to and from layover).

[27] Final service provider for future New England Regional service has not been determined.

[28] Massachusetts Department of Transportation. *Basis of Operations Analysis and Assumptions Verification Report*. Version 3. June 2014.

Table 1-4 — Existing and Projected 2035 Daily Non-Revenue Trips

Yard/Facility	Existing Service (2013)				Future Service (2035)					
	MBTA		Amtrak		MBTA		Amtrak		New England Regional	
	To Yard	From Yard	To Yard	From Yard	To Yard	From Yard	To Yard	From Yard	To Yard	From Yard
Amtrak Southampton Street Facilities and MBTA S&I	39	38	16	16	6	5	25	25	4	4
Readville – Yard 2	10	10	-	-	7[a]	7[a]	-	-	-	-
Beacon Park Yard	-	-	-	-	15	15	-	-	-	-
Widett Circle	-	-	-	-	30	30	-	-	-	-
Total	**49**	**48**	**16**	**16**	**58**	**57**	**25**	**25**	**4**	**4**

[a] These 14 future MBTA non-revenue moves travel to/from Readville – Yard 2 for revenue Fairmount Line service at Readville.
Sources:
(Existing Revenue Trips) MBTA Schedules and Equipment Cycle Effective April 23, 2013, and Amtrak Schedules Effective January 14, 2013.
(Future Revenue Trips) NEC Intercity Service Alternative: "B-Low 2020-2030" operating plan provided by Amtrak on November 11, 2013.
Massachusetts Department of Transportation, *South Station Expansion Project, Final Environmental Impact Report,* Appendix E, Rail Operations Analysis Technical Report, June 2016.

As Amtrak and MBTA commuter train volumes increase, the existing capacity constraints at South Station will make reliable operations increasingly difficult to achieve within the existing infrastructure, which will in turn negatively impact service reliability on the northern portion of the NEC and on the south side of the MBTA commuter rail operations. Furthermore, existing constraints will greatly inhibit the ability of both Amtrak and the MBTA to serve potential demand by supplementing existing services or adding new rail service to South Station. Without infrastructure improvements to increase capacity, these services cannot be accommodated and their projected benefits will not be realized.

1.4.2. Inadequate Rail Station Facilities

Pedestrian platforms, circulation, and waiting areas for transit and rail facilities should be designed to provide a reasonable level of service (LOS) for passengers and other station visitors.[29] The existing South Station headhouse facilities which consist of the Rail Terminal and waiting areas, do not adequately support current and future passenger service needs. Station performance is typically assessed based on the station's ability to accommodate morning and evening peak period passenger demand. Figure 1-3 depicts the passenger experience at various different levels of service. LOS C would allow for freely selected walking speeds, with passing possible in unidirectional streams and only minor conflicts resulting from reverse or cross movement. As stated in Section 1.2.3, the South Station Bus Terminal expansion is being included as part of the SSAR project and MassDOT is coordinating the two projects.

Poor Passenger Level of Service

The existing passenger waiting area and circulation zones are inadequately sized and configured to accommodate the current daily demand. This results in an unacceptable passenger experience of LOS E/F (minimum five square feet per person) that occurs for short periods during peak boarding and alighting. An LOS E/F results in reduced walking speeds, restricted passing, and intermittent stopping, and it approaches the maximum occupant capacity of the walkway. The concourse configuration forces passenger queues to overlap. In addition, many of the current passenger amenities at South Station are obsolete and do not meet the standards for a major, modern rail passenger transit facility.

[29] LOS for pedestrian flow and queuing range from LOS A (no crowding) to LOS F (extreme crowding).

Another goal of the SSX project is to provide adequate space and appropriate facilities to safely and conveniently manage the projected peak-hour pedestrian demand. The station's size is designed relative to the pedestrian circulation elements that are fundamental to servicing the passenger demand.

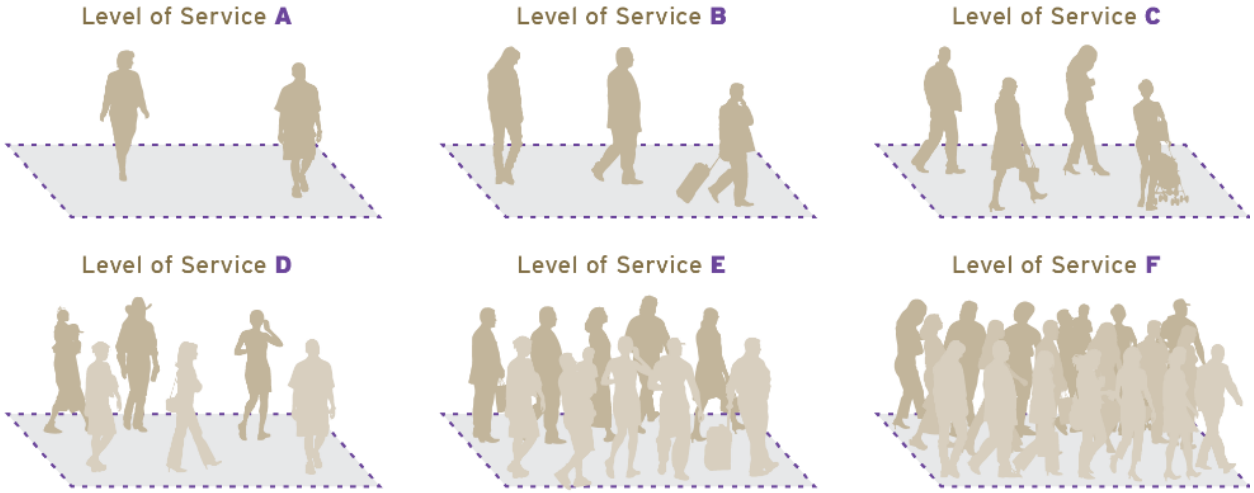


Figure 1-3 — Level of Service Diagram[30]

Platform Deficiencies

Last upgraded approximately 30 years ago, the station platforms do not comply with modern design standards, including MassDOT's current standard island platform requirements. The station's platforms are exposed to the elements, forcing riders to walk through rain, snow, and extreme temperatures to reach their trains. Existing platform lengths do not meet the MBTA's and Amtrak's future berthing desires of 850 feet and 1,050 feet, respectively, to accommodate longer trainsets needed to meet future demand. For the most part, the existing platforms have adequate area to provide a LOS D with an occupant load of only one MBTA commuter rail bi-level coach trainset of eight cars, but the service declines sharply when concurrent train arrivals occur on the same platform. Additionally, upgrades are required to stay current with Americans with Disabilities Act (ADA) and life safety regulations, including emergency egress considerations.

Ability to Accommodate Increased Ridership

The existing headhouse includes the Main Hall that provides access to rapid transit, bus, commuter rail, and intercity passengers daily. The existing passenger waiting area and circulation zone constitutes a net area of approximately 15,000 square feet and is inadequately sized and configured to accommodate the current daily demand. This often results in an unacceptable passenger LOS E/F (minimum 5 square feet/person) that occurs for short periods during peak boarding and alighting. The projected service increase for Amtrak and commuter rail will add 35,000 combined boardings and alightings per day to the already congested station.[31] South Station serves various transportation modes, but the wayfinding program directing passengers to transfers between modes is unclear and confusing. The station needs to have an improved wayfinding and signage program directing passengers between all modes, but in particular the connection

[30] Information referenced from *Pedestrian Planning and Design*, Dr. John Fruin, 1971.

[31] Massachusetts Department of Transportation. *South Station Expansion Project, Draft Environmental Impact Report*, Appendix 9 (Part 3), *Ridership Forecasting Technical Report*, October 2014. All results rounded to nearest 100, except for commuter rail results, which are rounded to the nearest 1,000.

between the bus and train terminals needs to be clarified and illuminated. In addition, the passenger amenities available at the station will need to be improved to accommodate the anticipated growth.

To remedy the existing public space deficit and to accommodate the future increase in service, additional platform, public circulation, and waiting area space in close proximity to the platforms is required to achieve the MBTA's desired pedestrian LOS. Passenger support facilities are needed to update South Station to a first-class rail transportation hub comparable to a modern airport, enabling large numbers of people to travel with a level of comfort that is expected in a modern city and an improved wayfinding and signage program throughout the station will ease congestion and improve passenger experience. The ability of South Station to meet passenger needs and comfort expectations associated with a modern intermodal and multimodal transportation center is an important strategy to ensuring that rail travel along the NEC remains a viable and attractive transportation choice, responsive to the economic and transportation needs of the region.

1.4.3. Insufficient Layover Space

A goal of the SSX project is to meet current and future MBTA commuter rail layover capacity to support projected service increase. The MBTA's current south side vehicle layover facilities are insufficient; neither the capacity nor the location of vehicle layover facilities meets existing and proposed layover facility program needs and railroad operational requirements. Figure 1-4 shows the location of the existing layover facilities and Figure 1-5 shows SSX project locations, including potential future layover expansion areas.

Total Layover Facility Deficit

Current MBTA service levels require midday layover space for 28 trainsets (locomotives and coaches), but space exists for only 22 trainsets. This shortfall in six layover spaces forces the MBTA to store non-revenue trains at the station platforms while waiting for available slots at existing south side layover facilities. Use of the South Station platform tracks for train layovers is inefficient and increases congestion at the terminal and creates operational conflicts, especially during morning and evening peak periods. Platform space that should be used to provide mobility for passengers is instead used to "park" trains with nowhere else to wait for their next trip. This situation is exacerbated in inclement weather; when trains operate behind schedule; when equipment needs to be changed; or when other issues, such as equipment failures or passenger emergencies, occur.

Based on information received from Amtrak in June 2013, the peak layover capacity for Amtrak's current South Station service is eight trainsets during the daytime and 13 trainsets overnight.[32] All of Amtrak's existing layover needs (daytime and overnight) are accommodated at Amtrak's Southampton Street Yard. Amtrak's Front Yard is not used by Amtrak for layover functions. It is currently used for MBTA layover and Amtrak non-revenue, rail-bound equipment storage, as well as for Amtrak maintenance-of-way material storage needs.

[32] Personal communication with Amtrak, dated June 14, 2013.

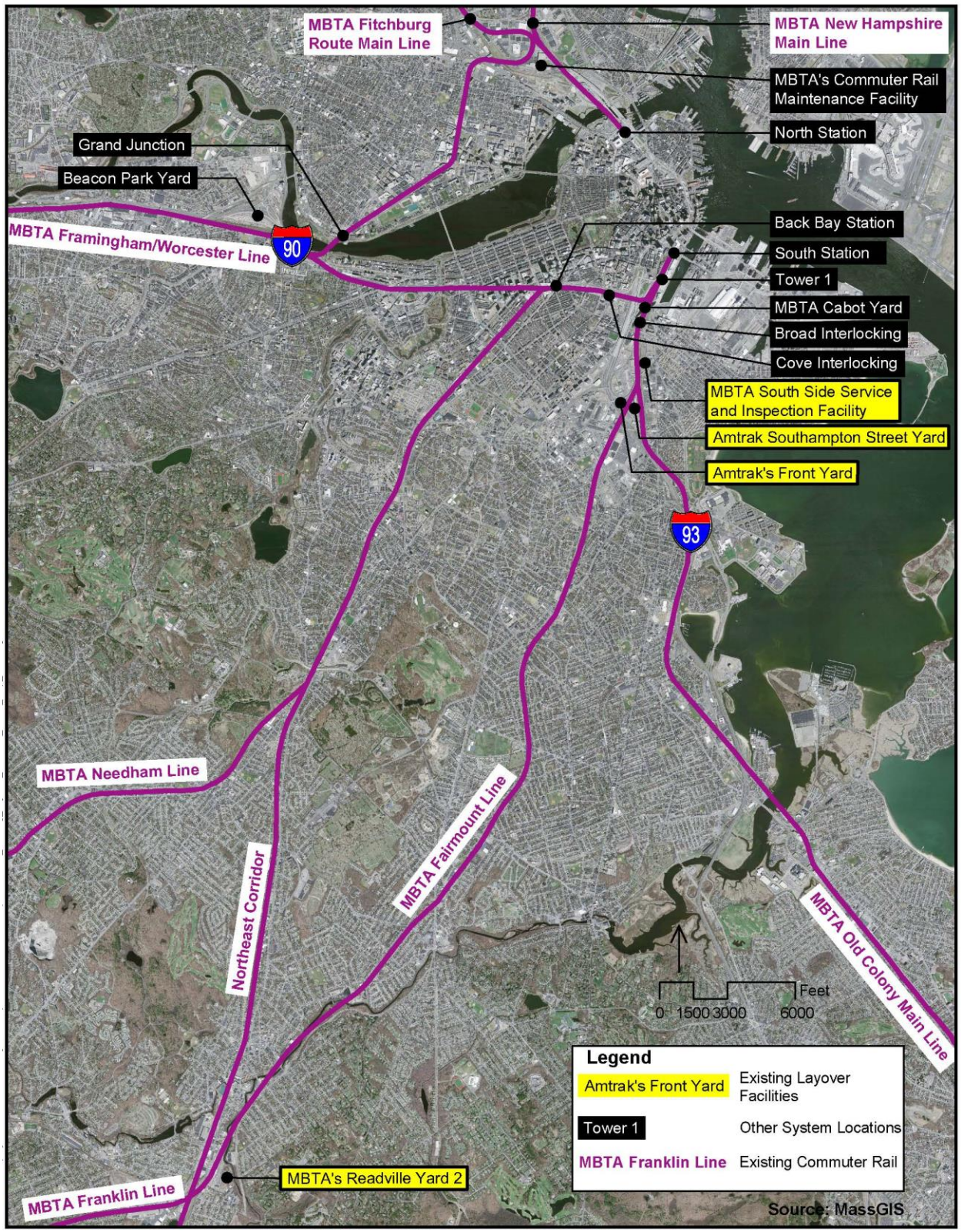


Figure 1-4 — Existing Layover Facilities

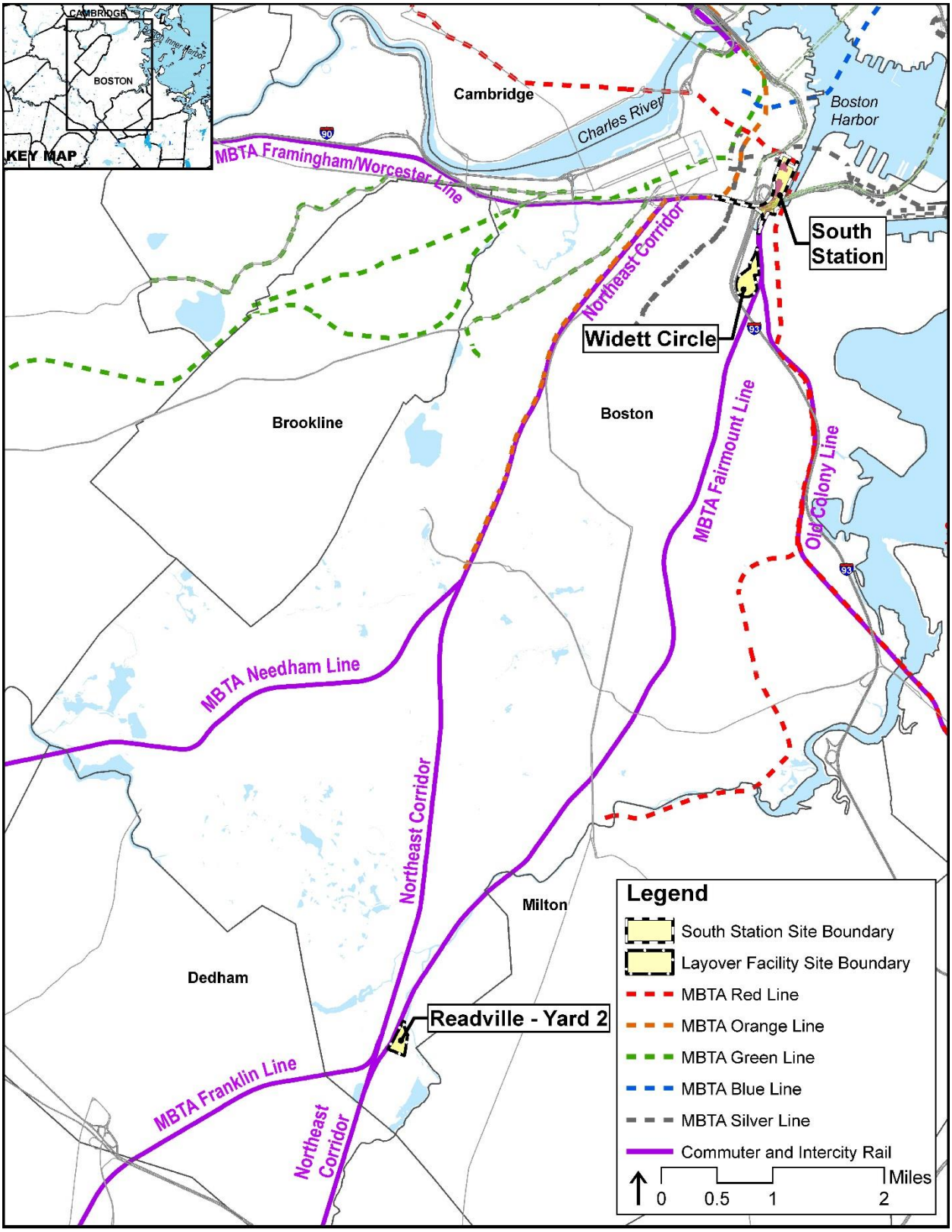


Figure 1-5 — Project Location Map, showing Proposed Layover Facilities and South Station Site Boundary

Based on the MBTA's needs for longer trainsets, increased services and fleet acquisitions,[33] as well as Amtrak's need to expand within its existing facilities, the MBTA projects that by 2040 it will have the capacity to store only 28 of the 49 trainset spaces needed – a shortfall of space for 21 trainsets.[34] Based on guidance provided by FRA and Amtrak in October 2013,[35] in the future Amtrak will require overnight layover for 20 trainsets (eight Acela/High Speed, 11 Regional/New England Regional and one long distance trainset) to operate its service.[36, 37] The location of where future Amtrak layover needs will be met has not been confirmed; however, Amtrak indicates that it does not foresee a need for additional overnight layover capacity beyond the use of current Amtrak-owned facilities in other locations around New England and the Northeast.

Layover space is needed to accommodate future MBTA service increases and fleet expansions. With anticipated increased service demands for both Amtrak and the MBTA into South Station, the lack of sufficient layover capacity for the MBTA will become a major constraint and will substantially limit planned rail service growth in the region. The expansion of South Station, along with additional layover capacity, would improve operating capacity and on-time performance for service into the station.

Operational Requirements

The location of layover facilities is one of the main factors that determines the required diverging moves within Tower 1 Interlocking and the approach interlockings for both revenue and non-revenue trains moving in and out of South Station. Currently, all layover facilities are located south of South Station, which does not correspond to existing service requirements. Approximately 60% of MBTA revenue trains approach South Station from the western routes, and 40% of trains approach South Station from the southern routes. With the addition of Amtrak revenue trains, the split is approximately 30% on the south and 70% on the west. The location of the layover facilities exclusively south of the terminal creates serious capacity constraints within the terminal area.

Existing non-revenue train movements are dispatched with the same precision as revenue train movements. This is a critical piece of the overall operations of South Station because both revenue and non-revenue trains must pass through Tower 1 Interlocking. Given the constraints of the existing terminal infrastructure, including both the limited number of platforms and the approach interlockings at Tower 1, Cove, and Broad Interlockings, balancing competing revenue and non-revenue movements can impact operational performance on a daily basis. As shown in Figure 1-2 and Figure 1-4, for example, non-revenue yard movements from the lower numbered tracks at the westerly side of the terminal must crossover to the Fairmount Line that provides access to Amtrak's Southampton Street Yard and Readville Yard, the MBTA's primary layover facilities. These crossover moves cut off access to most of the South Station platforms, obstructing operations on the NEC into the terminal. As Amtrak and MBTA commuter train volumes increase, these conflicting movements will increasingly hinder operations within the existing infrastructure. Revenue trains will be competing not only for limited capacity and terminal track space, but also with non-revenue trains moving between the terminal and layover yards.

[33] Massachusetts Department of Transportation, South Station Expansion Project, *Environmental Notification Form, Appendix C – Layover Facility Alternatives Analysis Report*, March 2013.

[34] This analysis assumed that by 2025, the MBTA would be using a four-track layover yard on an MBTA easement at Beacon Park Yard (BPY) for layover of 12 trainsets. This analysis also assumed reduced capacity by six trainsets at Southampton Street Yard and Front Yard due to proposed expansion of the MBTA's fleet to eight-car trainsets.

[35] Personal communication with FRA and Amtrak dated October 11, 2013.

[36] These figures do not include Amtrak's Next Generation High Speed Rail train layover needs, which will be identified and developed independently from the scope of the SSX project.

[37] Amtrak. *South Station Boston Expansion Project, Projected Intercity Train Movement and Ridership Data to Support the Evaluation of Yard and Training Servicing Needs and Pedestrian Modeling of the Station*, Memorandum to Massachusetts Department of Transportation. Revised, September 26, 2013.

As South Station has two approach routes, increasing the layovers to the west of the terminal, instead of solely to the south, would make railroad operations at South Station more efficient and better able to accommodate future service growth. By creating a situation with such a split layover facility, operations would be improved by keeping trains to one side of the terminal or the other.

1.5. Performance Objectives

To evaluate the SSX project alternatives, MassDOT developed four measurable performance objectives directly related to the SSX project purpose and need. Additionally, MassDOT and FRA evaluated the SSX project alternatives relative to potential environmental impacts.

1.5.1. Meet 95% On-time Performance and Minimize Delays

Consistent with current Amtrak and MBTA service delivery policy goals, [38, 39] MassDOT established a goal of 95% OTP for trains arriving at the South Station complex (see Table 1-1 and Table 1-2). It is the intent of this project to provide greater service capacity and reliability to the greatest extent possible with operational improvements.

1.5.2. Provide Sufficient Track and Platform Capacity

By the year 2035, as projected by MassDOT, 554 train movements (arrivals and departures) are anticipated at South Station, consisting of 80 weekday Amtrak revenue trips, 315 weekday MBTA commuter rail revenue trips, and 159 Amtrak and MBTA non-revenue trips. Simulation tests showed that 20 station tracks would be sufficient to accommodate Amtrak's and the MBTA's future service plans, taking into account the geographic constraints of the Tower 1 Interlocking.[40] Therefore, proposed capacity improvements include the construction of seven new tracks and four new platforms to provide a total of 20 tracks and 11 platforms. In addition, several existing tracks and platforms would be lengthened and/or widened, as required. Tower 1 and Broad Interlockings would also be reconfigured to meet requirements.

MassDOT established platform capacity standards to accommodate Amtrak's future berthing requirement of 1,050 feet and the MBTA's future berthing requirement of 850 feet. The existing platforms are approximately 18 feet wide and meet current ADA and National Fire Protection Association (NFPA) 130 standards and the new platforms would be 26 feet wide and exceed those standards.

1.5.3. Accommodate Passenger Service Needs

The project would improve South Station facilities by expanding capacity, providing a more comfortable passenger environment, and providing better connections to surrounding neighborhoods. The new expanded station would provide both a physical and visual link between South Station and the waterfront via the new entrances along a reopened Dorchester Avenue and an extension of the Harborwalk. The additional public access on Dorchester Avenue is critical to accommodating the anticipated increase in ridership at the proposed platforms. The station design would provide adequate space and appropriate facilities to safely and conveniently manage the projected peak-hour pedestrian demand while also providing new passenger amenities, passenger services, station retail, and food and beverage concessions.

[38] Amtrak. *Intercity Passenger Rail On-Time Performance: Twentieth Quarterly Report to Congress*. February 2013. Viewed June 12, 2013 at www.fra.dot.gov.

[39] According to MBTA's *Service Delivery Policy*, a train is considered 100% on time if it is arriving or departing at a terminal station within 5 minutes of scheduled arrival and departure times. The MBTA Commuter Rail Schedule Adherence Standard for OTP is 95%.

[40] Massachusetts Department of Transportation, *Massachusetts Department of Transportation Boston South Station HSIPR Expansion Project, Technical Memorandum: Network Simulation Analysis of Proposed 2030 MBTA/Amtrak Operations at South Station*. *Final Report*. August 1, 2010. http://www.massdot.state.ma.us/Portals/25/Docs/FRA_HSIPR/Appendix_A1.pdf.

To create a comfortable and contemporary transportation facility, MassDOT established an overall goal of LOS C to accommodate passengers of the South Station public circulation and waiting areas. These goals are typically established for a facility of this type as they safely and conveniently accommodate passengers during peak times, while not being oversized for the non-peak times.

1.5.4. Provide Adequate Vehicle Layover Capacity

MassDOT has determined the amount and location of preferred vehicle layover capacity according to the MBTA's layover facility program needs and railroad operational requirements. Based on ongoing conversations with Amtrak, Amtrak's current and future layover needs are accommodated within its existing facilities. The MBTA requires immediate midday layover space for six additional trainsets and, by 2035, midday layover space for 21 additional trainsets.[41]

1.6. Other Transportation-related Goals

While the purpose of the SSX project is to expand South Station Rail Terminal and related layover capacity, the project also supports other broad-based transportation, community, and economic development goals of the NEC, the Boston metropolitan region, and the City of Boston.

1.6.1. Support Regional and Local Economic Development

The NEC's population, 51 million people,[42] represents approximately one in every seven Americans; jobs in the NEC region account for approximately one out of every five jobs in the United States.[43] The NEC region is forecast to grow substantially, from approximately 51 million residents in 2010 to 58 million residents in 2040, representing a 14% growth over 30 years. Currently, the NEC region generates approximately $1 in every $5 of gross domestic product (GDP). By 2040, the region's GDP is expected to more than double to over $7 trillion.[44]

At a regional level, the SSX project would meet a critical infrastructure need of the NEC and a regional goal of building capacity for growth in passenger railroad infrastructure. Travel demand in the NEC region is expected to grow faster than the 14% population growth rate. Ridership on Amtrak's NEC services is projected to increase from 13 million in 2010 to 23 million in 2030.[45] With capacity nearly or fully consumed, however, the rail system's ability to absorb future demand is limited. By expanding capacity at South Station, the SSX project would address a long-standing, previously identified chokepoint on the NEC.

At a local level, South Station is viewed as a key gateway linking Downtown Boston and the emerging South Boston Waterfront/ Innovation District. The South Boston Waterfront/Innovation District is one of the fastest growing neighborhoods in the City of Boston, and in 2010, the City re-branded the area as the Innovation District to attract research-based, innovative companies, and mixed-use residential and commercial development. According to the *Fort Point District 100 Acres Master Plan*, an expanded South Station is an essential component of the continued growth and expansion of the District. Without the

[41] This analysis assumed that by 2025, the MBTA would be using a four-track layover yard on an MBTA easement at Beacon Park Yard for layover of 12 trainsets. This analysis also assumed reduced capacity by six trainsets at Southampton Street Yard and Front Yard due to proposed expansion of the MBTA's fleet to eight-car trainsets.

[42] Northeast Corridor Infrastructure and Advisory Commission. *The Northeast Corridor and the American Economy*. April 2014. http://www.nec-commission.com/wp-content/uploads/2014/02/NEC_american_economy_report.pdf.

[43] Northeast Corridor Infrastructure and Operations Advisory Commission. *State of the Northeast Corridor Region Transportation System.* February 2014.

[44] Federal Railroad Administration. *NEC Future, NEC Facts and Figures*. Accessed August 22, 2013. http://www.necfuture.com/facts_figures/.

[45] Northeast Corridor Commission. *The Northeast Corridor and the American Economy*. Accessed April 2014. http://www.nec-commission.com/wp-content/uploads/2014/02/NEC_american_economy_report.pdf.

addition of tracks at South Station, the *Fort Point District 100 Acres Master Plan* does not recommend a full "build-out" of the South Boston Waterfront/Innovation District area.[46]

1.6.2. Potential for Joint Development

The expansion of South Station requires the acquisition of the adjacent USPS parcel that includes a portion of Dorchester Avenue which is limited to USPS use only. The station expansion is not anticipated to require all of the USPS property and MassDOT intends to return the included portion of Dorchester Avenue to a public right-of-way. The expectation is that there will be undeveloped land fronting Dorchester Avenue remaining after completion of the transportation elements of the SSX project that could have potential to accommodate future transit oriented development. MassDOT is coordinating with the City of Boston to develop a plan that will direct any potential future joint development in a manner that is complementary to the existing and future neighborhood plans. MassDOT and FRA also examined opportunities to incorporate joint development as part of the project (see Chapter 2).

1.6.3. Improve and Expand Boston's Intermodal and Multimodal Transportation Network

South Station is a critical piece of transportation infrastructure for the City of Boston and the Boston metropolitan area, and is Boston's busiest intermodal and multimodal transportation hub. In addition to providing Amtrak and MBTA commuter rail service, and MBTA rapid transit and fixed-route bus service, South Station is a portal for private carrier bus service. South Station currently handles approximately 128,000 daily combined Amtrak, MBTA, and intercity bus boardings and alightings.[47] The South Station Bus Terminal, located adjacent to the Rail Terminal, is a hub for intercity, regional, and local bus service in eastern Massachusetts. There are 10 MBTA bus routes that stop in the vicinity of South Station. Eleven private bus companies operate out of the terminal; of these bus companies, five companies provide commuter service between South Station and the Greater Boston metropolitan area, and six companies provide regional service to New England and points beyond. On an average weekday, there are approximately 590 combined bus departures and arrivals at the terminal, serving approximately 12,200 daily Bus Terminal passengers.[48] South Station also has facilities to accommodate bicyclists, pedestrians, and taxicab patrons. Hubway's South Station location has experienced a notable increase in use, increasing from approximately 4,000 trips in August 2011 to approximately 8,200 trips in August 2013, an increase of over 100%. Additionally, there are approximately 950 taxicab pickups/drop offs on Atlantic Avenue at South Station each weekday.

The SSX project would enhance and expand the existing intermodal and multimodal transportation network. By increasing the rail capacity of South Station, the SSX project would directly support increased transit use for local and intercity travel. Currently, there is a limited connection between the existing South Station headhouse and the South Station Bus Terminal. With a proposed expanded Rail Terminal and passenger concourse area, opportunities exist with both the SSX project and the SSAR project to improve the interconnections between the two terminals, as well as with the MBTA Red and Silver Lines.

[46] Boston Redevelopment Authority with Fort Point Channel Working Group. *The Fort Point District 100 Acres Master Plan*. September 2006. http://www.bostonredevelopmentauthority.org/getattachment/0a9d9d1c-9906-4a26-b94e-35762ad08c07.

[47] Existing year combined South Station boardings and alightings, 2012; See Massachusetts Department of Transportation. *South Station Expansion Project, Draft Environmental Impact Report*, Appendix 9 (Part 3), *Ridership Forecasting Technical Report*, October 2014. All results rounded to nearest 100, except for Commuter Rail results, which are rounded to the nearest 1,000.

[48] Central Transportation Planning Staff. *Massachusetts Regional Bus Study,* June 2013.

1.6.4. Restoration of Dorchester Avenue

Currently, access along the majority of Dorchester Avenue in the immediate vicinity of South Station is restricted for use by the USPS in support of its operations, with very limited public access allowed for USPS customers and MBTA commuters. The project would restore approximately 0.5 miles of Dorchester Avenue for public use and provide for multiple access points into the expanded station from Dorchester Avenue. These access points would allow passengers multiple station arrival and departure options and would provide connectivity through the station between Atlantic Avenue and Dorchester Avenue. Restoration of Dorchester Avenue would include enhanced pedestrian and bicycle connections and facilities, including sidewalks, crosswalks, and bicycle lanes; and expanded bicycle access through and around South Station and its adjacent neighborhoods. Reopening Dorchester Avenue would provide the MBTA with an opportunity to reroute buses to provide more direct connections to downtown, and would provide relief for the current congestion along Atlantic Avenue.

1.6.5. Extend the Harborwalk and Reactivate the Fort Point Channel Area

Restoration of Dorchester Avenue would also include construction of a long-awaited 0.5-mile section of the Harborwalk network. Not only would the SSX project add approximately 2,500 linear feet to the Harborwalk and complete the last remaining gap in a continuous waterfront walkway in this part of Downtown Boston, it also would provide linkages to the waterfront from neighborhoods around South Station, including Chinatown and the Leather District. By providing South Station users as well as the general public with direct access to Fort Point Channel via an extended Harborwalk, the SSX project would advance an objective of the *Fort Point Channel Watersheet Activation Plan* to enhance "the civic role" of Fort Point Channel.[49] Further, direct access to the Fort Point Channel waterfront would present opportunities to expand the multimodal network in the South Station area to include water travel.

1.7. Permits and Approvals

Table 1-5 lists federal, state, and local agency permits and approvals that are anticipated for the project.

Table 1-5 — Anticipated Permits, Approvals, and Notifications

Agency	Permit, Approval, or Notification	South Station	Layover Facilities
Federal			
Federal Railroad Administration (FRA)	• Finding of No Significant Impact • Section 4(f) Determination • Section 106 Finding • Federal Funding Approval	yes	yes
Federal Aviation Administration (FAA)	• Notice of Proposed Construction or Alteration	yes	no
Massachusetts Historical Commission (MHC)	• State Register Review • Section 106 Review	yes	yes
Massachusetts Office of Coastal Zone Management (CZM)	• Federal Consistency Certification	yes	Widett Circle only
U.S. Army Corps of Engineers (USACE)	• Section 404 Clean Water Act Permit	no	if required
U.S. Environmental Protection Agency (U.S. EPA)	• National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Construction Sites	yes	yes

[49] Boston Redevelopment Authority. *Fort Point Channel Watersheet Activation Plan.* May 2002.

Agency	Permit, Approval, or Notification	South Station	Layover Facilities
U.S. Environmental Protection Agency (U.S. EPA) *(Cont'd)*	• NPDES Industrial Stormwater Permit for Stormwater Discharges	no	if required
	• Notification of Building Demolition	yes	yes
U.S. Postal Service (USPS)	• Approval of the sale of its property on Dorchester Avenue	yes	no
State			
Massachusetts Department of Environmental Protection (MassDEP)	• Chapter 91 Waterways License	yes	no
	• Stormwater Management Standards Compliance Review	yes	yes
	• Sewer Extension/Connection Compliance Certification	yes	yes
	• Massachusetts Contingency Plan Review/Preliminary Determination	yes	yes
	• Notification Prior to Construction or Demolition	yes	yes
	• Asbestos Notification/Mass Department of Labor and Workforce Development, Division of Occupational Safety	yes	yes
	• Section 401 Water Quality Certificate	no	if required
Massachusetts Department of Public Safety	• Building Permit	yes	yes
Massachusetts Executive Office of Energy and Environmental Affairs (EEA)	• Massachusetts Environmental Policy Act Review *(Completed Summer 2016)*	yes	yes
	• Public Benefit Determination *(Completed Summer 2016)*	yes	Widett Circle only
Massachusetts Water Resources Authority (MWRA)	• Temporary Construction Site Dewatering Discharge Permit	if required	if required
	• 8(m) Permit	if required	if required
Local			
Boston Conservation Commission	• Order of Conditions (Massachusetts Wetlands Protection Act)	yes	Readville – Yard 2 only
Boston Department of Parks and Recreation	• Review of construction within 100 feet of a park	yes	no
Boston Fire Department	• Demolition and construction-related permits	yes	Widett Circle only
Boston Public Improvement Commission (PIC)	• Approvals	yes	yes
Boston Transportation Department (BTD)	• Signal Change Approval	yes	yes
	• Construction Management Plan	yes	yes
Boston Water and Sewer Commission (BWSC)	• Demolition Termination Verification Approval	yes	yes
	• Building Site Plan Review and Approval	yes	yes
	• Drainage Discharge Permit	yes	yes

Chapter 2 – Alternatives Analysis

This chapter provides an overview of the alternatives analysis conducted during earlier phases of the project in order to develop the Build Alternative, which is also this project's Preferred Alternative. The following sections discuss the identification and evaluation of the key project components; provide a summary of the alternatives development process; and provide a description of the No Build and Build Alternative. The SSX project consists of the following primary components (presented in order of the proposed construction sequence):

- Acquire and demolish the USPS facility;
- Reopen Dorchester Avenue and extend the Harborwalk;
- Expand the South Station Terminal; and
- Construct rail layover facilities.

The purpose of the SSX project is to expand South Station Rail Terminal capacity and related layover capacity to meet current and anticipated future (2035) high-speed, intercity, and commuter rail service needs that will:

- Enable growth in passenger rail transportation along the NEC and within the Commonwealth of Massachusetts;
- Improve service reliability through updates to the rail infrastructure and related layover capacity;
- Improve the passenger capacity and experience of using South Station;
- Promote city-building in a key area of Boston; and
- Allow for Dorchester Avenue to be reopened for public use and enjoyment for the first time in decades.

In order to develop alternatives that could address the project purpose and need, MassDOT and FRA (sometimes referred to as the Project Team) divided the Proposed Action into five major elements:

- Station headhouse;
- Rail;
- Layover;
- Joint development; and
- Roadway.

The Project Team developed a separate set of alternatives for each of the five elements and conducted a screening process for each set of alternatives, dismissing those alternatives that were not reasonable or feasible, and identifying those alternatives that would best meet the goals of the project, while being compatible with other project elements. The Project Team evaluated the alternatives for each element using criteria and principles specific to that element. The Team then identified an alternative for each project element, that best met the needs of the project, and incorporated it into a comprehensive Build Alternative for the project, which was then advanced for full environmental evaluation. The stakeholder groups included users of South Station, abutting neighborhoods, and municipal, state, and federal agencies. See Chapter 5 – *Public Involvement and Agency Coordination* for more information on the stakeholder outreach.

MassDOT designed the alternatives identified for the station headhouse, rail, layover, and joint development elements to be compatible with each other so that each element alternative the Project Team selected to be part of the project Build Alternative was interchangeable. By making the element alternatives compatible, the Project Team could conduct the alternatives analyses for each element simultaneously. The only element not compatible with every other element was the roadway element, which the Project Team developed to correspond with specific joint development alternatives (see Figure 2-1). As shown in Figure 2-1, the preferred headhouse, rail, and layover alternatives progressed in the process and were then modified by the two remaining elements, joint development and roadway.

The Project Team chose the Transportation Improvements Only joint development alternative and the corresponding roadway alternative to move forward. The Preferred Build Alternative analyzed in this Environmental Assessment (EA) is comprised of the preferred alternative of each of the five major elements: station headhouse, rail, layover, joint development, and roadway.

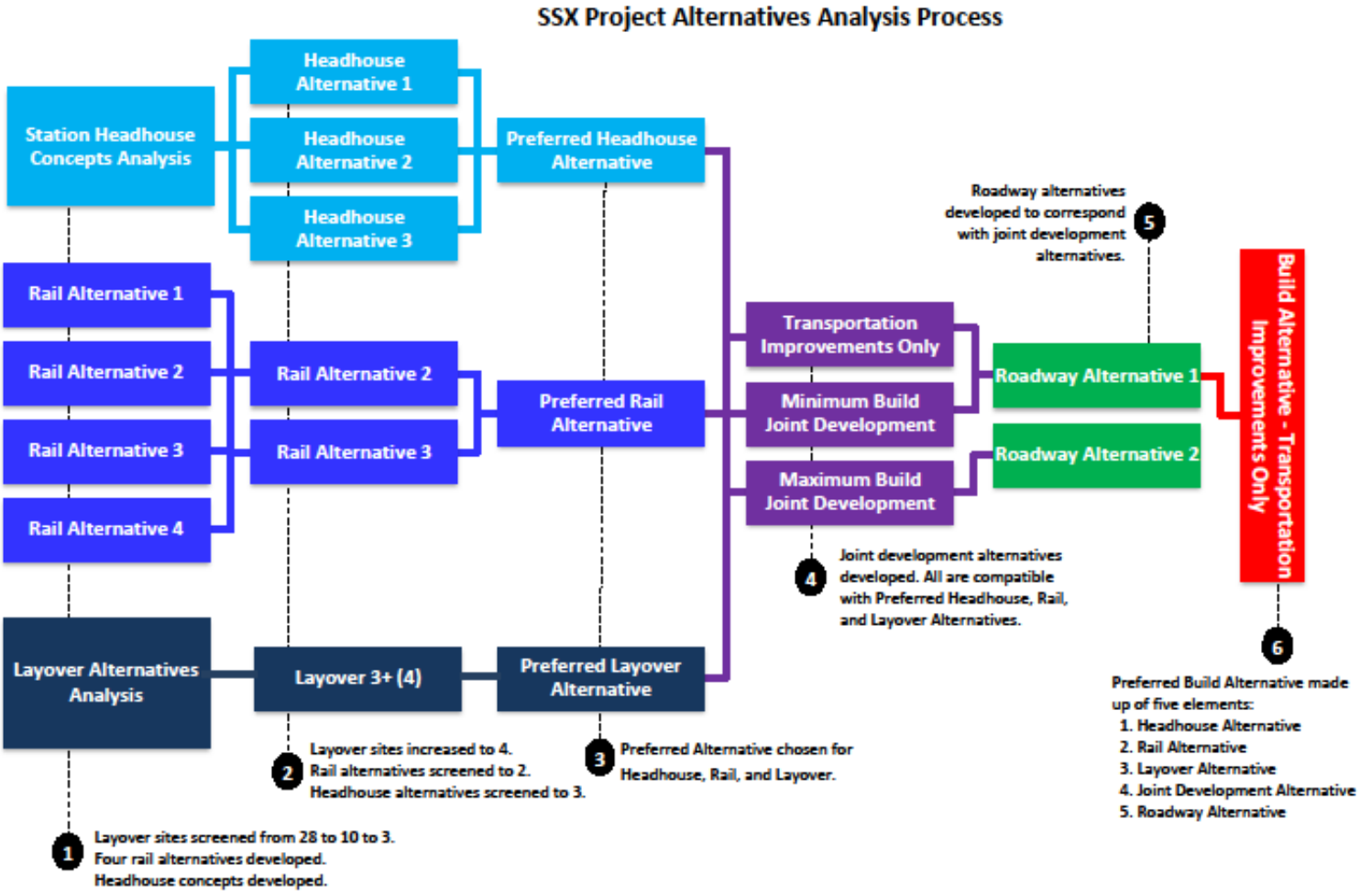


Figure 2-1 — SSX Project Alternatives Analysis Process

2.1. Alternatives Considered but Dismissed

The alternative identified for each project element that the Project Team determined best met the purpose and needs of the project was incorporated into the Build Alternative, which was then advanced for full environmental evaluation. A discussion of the alternatives analysis process, by element, is provided below. In consultation with FRA, MassDOT pursued separate NEPA and MEPA documents for the SSX project. MassDOT produced a Draft Environmental Impact Report (DEIR) and Final Environmental Impact Report (FEIR), which are available on the project website[1], as part of the MEPA process. More information on the alternatives analysis process can be found in the DEIR and FEIR.

2.1.1. Station Headhouse Alternatives Analysis

As part of the SSX project, MassDOT analyzed the headhouse expansion alternatives, as further detailed in Appendix A, *Station Headhouse Alternatives Analysis*. The analysis was influenced by numerous factors, including: project vision[2], future passenger experience, pedestrian flow and amenities, opportunities for and impacts of joint development/overbuild, and project purpose and need. The analysis of the headhouse expansion alternatives takes into consideration the urban context of South Station; existing and anticipated passenger circulation paths within and around the station; existing connections to the station headhouse and between MBTA rail, bus, and subway facilities; existing and anticipated passenger circulation paths between the rail station, its proposed expansion, and the existing bus facility; and existing and anticipated passenger circulation paths between the rail station and the existing office building at 245 Summer Street. The Project Team also considered the SSAR project,[3] which the Secretary of EEA approved in 2006 and the developer filed a Notice of Project Change in 2016.[4,5] Although not yet constructed, the SSAR project is considered an existing condition for purposes of SSX project analyses. The Project Team examined how the station headhouse expansion is integrated with the SSAR project to realize a coherent and functional multimodal station for bus, rail, subway, and intercity patrons at South Station.

MassDOT's goals for the expansion of South Station focus on transportation improvements, passenger experience, and intermodal connections. Initial unconstrained concepts included expanding the South Station footprint to include the USPS facility site and 245 Summer Street, as well as relocating or altering the SSAR project. After an initial screening, MassDOT opted to eliminate concepts that would involve acquisition of 245 Summer Street or relocate or require substantial changes to the SSAR project.

[1] Massachusetts Department of Transportation, South Station Expansion Project. *Environmental Notification Form*, *Appendix C*. March 2013.
Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report*, *Chapter 3 and Appendix 2*. October 2014.
Massachusetts Department of Transportation, South Station Expansion Project. *Final Environmental Impact Report*, *Appendix D*. June 2016.
All available at: https://www.massdot.state.ma.us/southstationexpansion/Documents.aspx

[2] The vision is defined in detail of Chapter 4 of Appendix A. By expanding and improving South Station, MassDOT intends to create a safe, attractive, and comfortable transportation facility, one that fully integrates passenger rail, public transit, well-designed bike/pedestrian facilities, and curbside pick-up and drop-off. This new vision for the station emphasizes convenient and comfortable passenger waiting areas with height, natural light, clear lines of sight and easy orientation, and view corridors to Fort Point Channel and the urban neighborhoods beyond. More broadly, MassDOT envisions an expanded South Station that is linked – physically and visually – to the waterfront via Dorchester Avenue (currently closed to the public) and an extension of the Harborwalk.

[3] The South Station Air Rights Project (SSAR), (also referred to as the Hines Project) was approved by the Secretary of the EEA in 2006 (EEA Number 3205/9131) as an approximately 1.8 million square foot mixed-use development to be located directly above the railroad tracks at the South Station headhouse. The SSAR project also includes a horizontally expanded bus terminal, pedestrian connections from the train station concourse and platforms to the expanded bus terminal, and a 3-level parking garage located above the bus terminal. In 1998, the Boston Redevelopment Authority (BRA), now Boston Planning and Development Agency (BPDA), designated the joint venture between Tufts University Development Corporation (TUDC) (an affiliate of Tufts University) and Hines as the redeveloper for the SSAR site.

[4] The South Station Air Rights project filed a Notice of Project Change with the BPDA on July 29, 2016, and received BPDA Board Approval on December 15, 2016. http://www.bostonplans.org/getattachment/147f7f58-dd54-4702-8659-ce81707bfc35

[5] The South Station Air Rights Project Notice of Project Change received a Certificate from the Secretary of EEA on October 7, 2016. http://209.80.128.250/EEA/emepa/mepacerts/2016/sc/npc/3205%20-9131%20NPC3%20South%20Station%20Air%20Rights%20Boston.pdf

MassDOT established a series of design principles for the South Station headhouse expansion, addressing planning and urban design, station architecture, access and connectivity, and historic preservation. The design principles are as follows:

- Design an exemplary new passenger terminal with welcoming and functional public spaces including natural light; improved circulation and egress measures; safety, security, and emergency response enhancements; and improved passenger amenities (e.g., weather protected boarding, ticketing, and waiting areas).
- Optimize connectivity for pedestrians (including commuters and visitors) to the Financial District, Chinatown, Leather District, South Boston Waterfront/Innovation District, Convention Center, the Rose Kennedy Greenway, Harborwalk, and other downtown destinations and activities.
- Maximize the station's intermodality by promoting connections to multiple transit services, walking and bicycling facilities, and taxis. Design project components to reduce carbon production and incorporate sustainable design elements.
- Connect South Station to adjacent neighborhoods and open spaces, including the waterfront and potential future air rights development,[6] through the thoughtful programming of uses and design of the public realm.
- Activate the building edges and streetscapes on all sides of the station to draw pedestrians to Dorchester Avenue, Summer Street, and Atlantic Avenue, with the Dewey Square entrance serving as the primary focal point of the station.
- Recognize and protect the historic integrity of the existing South Station headhouse and its value as a public space. Consider historic precedent in the design and integrate the expansion design with the existing station architecture. Maintain a public presence in the existing lobby, including the possible inclusion of information kiosks and displays, as well as retail.

Over the course of the project, the Project Team has developed and analyzed a wide range of expanded headhouse concepts. Some of the concepts presented dramatic shapes and spaces along the reopened Dorchester Avenue with expansive interior areas and some of the concepts presented smaller functionally efficient spaces that improved passenger flow, but did not meet stakeholder approval. Three main headhouse expansion alternatives evolved from the alternatives analysis process:

- **Headhouse Alternative 1: Base Condition – Single-level Concourse**, consisting of single-level boarding/exiting platforms utilizing the main existing headhouse entrance with side entrances to Atlantic and Dorchester Avenues.
- **Headhouse Alternative 2: Functional Concourses**, consisting of bridges located above platforms and connected to a new train shed with a Dorchester Avenue station entrance. Additional station entrances would be provided along Atlantic Avenue from the concourse bridges.
- **Headhouse Alternative 3: Diagonal Concourses**, consisting of bridges located above platforms and connected to an expanded headhouse with a prominent Dorchester Avenue station entrance. Additional station access would be provided along Atlantic Avenue from the concourse bridges.

The three headhouse expansion alternatives were compared and screened using various evaluation criteria, including: overall passenger circulation (including LOS), multimodal/integrated station, platform deficiencies, passenger experience and amenities, NFPA standards, ventilation, construction cost, phasing/constructability, and project vision. After discussions with the MBTA, MassDOT established an

[6] "Potential future air rights development" means development in addition to the SSAR project, which is considered an existing condition for the purposes of SSX project analyses.

overall goal of LOS C for the South Station public circulation and waiting areas to accommodate the increase in passengers associated with Amtrak's and the MBTA's future service increases.

The analysis resulted in the development of a new headhouse expansion alternative that incorporates elements from both Headhouse Expansion Alternative 2 and 3. Regulatory requirements, and desired passenger and service improvements guide the framework design of the new headhouse expansion alternative. MassDOT is committed to achieving the project goals outlined in the design principles, meeting and/or exceeding regulatory requirements, and providing a multimodal station that will serve all passengers today and in the future. Therefore, the new headhouse expansion alternative became the preferred headhouse expansion alternative because it accommodates increased rail service; enhances the passenger experience at the station; improves the multimodal connections; and integrates the station with the adjacent neighborhoods and open spaces. Additionally, the preferred headhouse expansion alternative would be aligned with Dorchester Avenue so that it would not preclude any future air rights development.

2.1.2. Rail Alternatives: Terminal Track Configurations

The SSX project includes an alternatives analysis to determine how to best expand the rail elements of the station in order to improve existing and proposed rail service – local, regional, and intercity – in and out of Boston. The expansion would include improvements to tracks, platforms, interlockings, passenger facilities, and other attendant infrastructure. The Project Team identified and evaluated two sets of rail infrastructure concepts: unconstrained rail alternatives and constrained rail alternatives.

Unconstrained rail alternatives were not limited by the boundary of the existing South Station and USPS property and/or constituted a complete rebuild of the South Station Terminal to capture all potential operational benefits. These unconstrained rail alternatives explored opportunities that were outside of the original study area, but could help achieve the project goals. However, the unconstrained rail alternatives substantially impacted the major infrastructure adjacent to and within the terminal, including: existing South Station headhouse; I-90 tunnels and ramps; I-93 and ramps; Central Artery/Tunnel vent buildings; and the MBTA Red Line. The costs associated with the unconstrained rail alternatives outweighed the operational benefits gained, and the Project Team then analyzed rail alternatives within a more defined boundary, the constrained rail alternatives, known henceforth as simply the "Rail Alternatives."

The Project Team analyzed a total of four rail alternatives[7] with a more conservative approach in order to minimize impacts to the existing infrastructure while still improving operations to and from the terminal. Rail Alternative 1 proposed a total of 19 tracks; Rail Alternatives 2 through 4 proposed a total of 20 station tracks. Benefits shared among the rail alternatives include streamlining operations, minimizing disruption to existing operations, and maximizing joint development potential. The rail alternatives comprise various layouts at the South Station terminal area and Tower 1 Interlocking, as described below:

- **Rail Alternative 1** – Prioritizes operational flexibility within the terminal and provides a complete redesign of the existing South Station terminal area and existing Bus Terminal, and would require a complete reconfiguration of the Tower 1 Interlocking. This alternative shifts the alignment of the terminal to reduce complex movements, eases the approach through a redesigned Tower 1 Interlocking, and allows for full mid-platform boarding at all tracks.
- **Rail Alternative 2** – Streamlines operations and completely reconfigures the existing Tower 1 Interlocking. This alternative adds new station tracks and platforms to the terminal and provides

[7] Massachusetts Department of Transportation, South Station Expansion Project, *Draft Environmental Impact Report*, *Chapter 3 and Appendix 2*. October 2014. Available at: https://www.massdot.state.ma.us/southstationexpansion/Documents.aspx

operational improvements such as parallel moves at a separate mini-terminal in an effort to reduce conflicting movements.

- **Rail Alternative 3** – Minimizes disruptions to existing operations and minimizes the level of reconstruction of existing infrastructure within the terminal. This alternative maintains, to the greatest extent possible, the existing platform configuration while adding new tracks and platforms parallel to the existing ones and allows for maximum platform accessibility for incoming trains.
- **Rail Alternative 4** – Maximizes the potential to build within the available airspace over the terminal track area ("overbuild"). This alternative consists of a complete redesign of the South Station terminal area without impacting the existing bus terminal and enhances the opportunity for future overbuild development by prioritizing the location of the overbuild support columns.

MassDOT, in consultation with FRA, dismissed Rail Alternatives 1 and 4 from further consideration because of the impacts to existing infrastructure and challenges each of the alternatives would cause throughout the construction period. In particular, both of these rail alternatives included a complete redesign of the existing terminal that would require a total shutdown of rail service for a significant period of time. The Project Team selected Rail Alternative 2 and Rail Alternative 3 to advance for further analysis.

MassDOT, in consultation with FRA, advanced certain elements of the designs for Rail Alternatives 2 and 3 to improve functionality and better address the project goals. This was followed by a second level of screening of Rail Alternatives 2 and 3, as detailed in the FEIR.[8] As the primary operators of the passenger trains utilizing South Station, Amtrak's and MBTA's perspectives on the functionality of terminal track configuration alternatives was particularly valuable, and hence, they were provided opportunities to review and comment on Rail Alternatives 2 and 3. Their comments and preferences were important to consider as part of each evaluation criteria. The Project Team evaluated Rail Alternatives 2 and 3 using the following criteria:

- **Platform accessibility**: MassDOT rated the platform designs of the rail alternatives for their accessibility by each service line and their ability to berth future Amtrak and MBTA trainsets. The goal is to provide maximum platform accessibility. In the case of an emergency or a stopped vehicle, flexibility in platform accessibility is critical. Platform accessibility is measured by the number of station tracks that each service track can access whether the crossover move occurs at the approach interlocking or at Tower 1 Interlocking.
- **Berthing:** MassDOT rated the platform designs of the rail alternatives for their ability to berth future Amtrak and MBTA trainsets. The goal is to accommodate Amtrak and MBTA platform berthing standards. In order for a trainset to use any platform, adequate berthing length is required.
- **Service reliability and ability to meet future service goals**: MassDOT ran operations simulations for each rail alternative and evaluated how each rail alternative would support future 2035 service levels, as well as its OTP and delay performance. Additionally, MassDOT identified operational efficiencies and limitations of each alternative.
- **Constructability** is measured by the degree to which each rail alternative would minimize impacts to existing infrastructure and minimize disruption to passenger service. The goals are to:
    - Minimize impacts to existing infrastructure including the station tracks and platforms, bus terminal, and foundations for future development (e.g., the SSAR project).
    - Minimize disruption to passenger service. South Station is one of the busiest terminals in the Northeast, thus, keeping the trains running during construction with the least impact

[8] Massachusetts Department of Transportation, South Station Expansion Project, *Final Environmental Impact Report*, *Appendix D*. June 2016. Available at: https://www.massdot.state.ma.us/southstationexpansion/Documents.aspx

to their schedules is a challenge. It is critical that construction phasing minimize disruption to operations and maximize safety.

- **Order-of-magnitude capital cost:** MassDOT evaluated the degree to which each of the rail alternatives minimize capital costs. MassDOT used order-of-magnitude costs to evaluate the constrained rail alternatives. Capital costs include station area track and platforms, Tower 1 Interlocking, approach interlockings, signals, communication system, and OCS.
- **Maintenance cost**: MassDOT evaluated the degree to which each of the rail alternatives minimize maintenance costs. It is not possible at this time to determine actual maintenance costs; therefore, MassDOT compared the quantity of maintenance expected for each of the constrained rail alternatives.

Results of the Analysis

Platform Accessibility: Rail Alternative 3 would provide maximum platform accessibility. Trains approaching South Station via the Fairmount and Old Colony routes would have universal platform accessibility. For the Framingham/Worcester and NEC service routes, platform access would vary depending on whether the crossover moves would be made at Tower 1 or Cove Interlocking. If the crossover moves were made at Cove Interlocking, then the Framingham/Worcester and NEC service routes would have access to station Tracks 1 through 14. Rail Alternative 3 presents increased flexibility in platform accessibility when compared to Rail Alternative 2. This increased flexibility would allow for greater operational opportunities for dispatchers in the event of delays.

Amtrak commented that Rail Alternative 3 is more consistent with their current dispatching than Rail Alternative 2, and expressed concerns with the differences between Rail Alternative 2 and their current dispatching. The MBTA commented that they would prefer the versatility of Rail Alternative 3.

Berthing: Both Rail Alternatives 2 and 3 would meet platform berthing standards for MBTA trainsets at all station tracks, providing design modifications[9] can be applied at all platforms. However, Rail Alternative 3 would accommodate MBTA trainsets at more station tracks than Rail Alternative 2 if platform design modifications are not permitted at some or all platforms. Rail Alternative 3 would meet platform berthing standards for Amtrak trainsets at 14 out of 20 station tracks. Rail Alternative 2 would meet platform berthing standards for Amtrak trainsets at only 10 out of 20 station tracks.

Service Reliability and Ability to meet Future Service Goals: The results of the analysis indicate that the proposed infrastructure for both Rail Alternative 2 and 3 would support proposed future operations and meet or exceed the MBTA Commuter Rail Schedule Adherence Standard OTP threshold of 95% of all trips departing and arriving at terminals within five minutes of scheduled departure and arrival times. The results also meet or exceed Amtrak's 2030 OTP target for Acela Express service and Northeast Regional service (95%).[10, 11] These results indicate the proposed infrastructure for both alternatives is robust and flexible enough to provide reliable service given the large increase in future 2035 trip volumes and will help to prepare the station to accommodate future service defined through FRA's NEC FUTURE program.

[9] MassDOT developed design modifications to enhance platform capabilities and accommodate Amtrak and MBTA berthing length standards. These modifications are design and operational solutions that vary from standard practice; however, they have been implemented successfully in other projects with similar constraints. For more details, see: Massachusetts Department of Transportation, South Station Expansion Project, *Final Environmental Impact Report, Appendix D*. June 2016.
Available at: https://www.massdot.state.ma.us/southstationexpansion/Documents.aspx

[10] Massachusetts Department of Transportation, South Station Expansion Project, *Final Environmental Impact Report, Appendix E*. June 2016.
Available at: https://www.massdot.state.ma.us/southstationexpansion/Documents.aspx

[11] Amtrak *Intercity Passenger Rail On-Time Performance: Twentieth Quarterly Report to Congress*. February 2013. Viewed June 12, 2013 at www.fra.dot.gov.

Alternative 3 does not provide the same level of operational efficiency or number of parallel moves as Alternative 2; but it does provide increased flexibility for non-revenue moves between the station platform tracks and the south side layover facilities with two ladders to access the Dorchester Branch tracks. This second Fairmount Line/Dorchester Branch ladder track provides more options to avoid delays if a disabled train or other unexpected activity blocked trackwork within the Tower 1 Interlocking.

Both Amtrak and the MBTA commented that the lack of a second ladder connection for the Fairmount Line/Dorchester Branch in Rail Alternative 2 was a significant concern and differs from what occurs today at South Station. It was stated that Rail Alternative 3 would be preferred as it would provide the second ladder connection within the terminal area. During stakeholder meetings, Amtrak and the MBTA both reflected on recent events where the second ladder connection was necessary for access to the terminal.

Constructability: Rail Alternative 2 would require a complete reconfiguration of the existing Tower 1 Interlocking and would require a new operations plan to be implemented by the dispatcher, while retaining existing station Track 1-13 alignments and platform widths. This complete reconfiguration of the existing interlocking is challenging to construct because it will require significant disruptions to current service to the terminal during construction. Rail Alternative 3 would maintain the existing configuration of Tower 1 Interlocking with modifications and replacements to a much lesser degree than Rail Alternative 2; it would not require the extensive realignment required in Rail Alternative 2. The additional track expansion in Rail Alternative 3 would tie into the eastern side of Tower 1 Interlocking, limiting the required track outages and impacts to rail service, especially for the tracks entering the terminal from the west.

Order-of-Magnitude Capital Cost: Capital costs were calculated for all tracks, signal system, OCS, communication system, and associated civil work within terminal and station areas including work at Tower 1, and the approach interlockings. These cost estimates were based on the initial conceptual designs and were used to compare Rail Alternatives 2 and 3. The capital costs analyzed do not represent present project costs. MassDOT selected Rail Alternative 3 to advance because it requires less additional infrastructure and is the less expensive option.

Maintenance Cost: Although specific costs associated with maintenance have not been calculated, the quantity of maintenance for the two alternatives can be compared. It is anticipated that Rail Alternative 3 would require the highest overall maintenance requirements because it would require a greater amount of special trackwork at Tower 1 Interlocking. Rail Alternative 2 would require a lesser amount of special trackwork at Tower 1 Interlocking and is therefore anticipated to require the least amount of overall maintenance and to have lower maintenance costs.

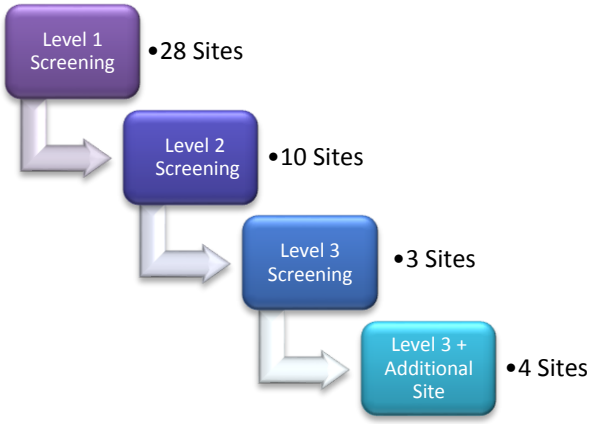
The Project Team evaluated Rail Alternatives 2 and 3 for their ability to meet future South Station performance objectives, including the need to accommodate future MBTA and Amtrak service plans and to meet on-time performance goals. Rail Alternative 3 performed better than Rail Alternative 2 for the majority of the rating categories, including stakeholder preference. MassDOT, in consultation with FRA, selected Rail Alternative 3 as the track configuration alternative to advance, as it best meets project needs.

2.1.3. Layover Facility Alternatives Analysis

South Station is operating at its design capacity for efficient train operations. At certain times of the day, its 13 tracks are fully utilized by Amtrak and the MBTA. As ridership and service levels have increased, the capacity at the MBTA's existing layover facilities during the midday has also been exceeded. An integral component of South Station operations is the utilization of nearby layover yards to store, service, inspect, and maintain trains when they are not in service. Layover yards are critical to operations because they provide a nearby location to stage trains during off-peak periods, thereby keeping unused trains off active tracks to minimize congestion at South Station. Additional layover space to service the

MBTA south side commuter rail operations is a critical need for the SSX project. The dense urban environment in close proximity to South Station, compounded with plans for additional development along the rail corridors, make selection of a suitable location for layover increasingly difficult.

MassDOT used a three-tiered screening alternatives analysis to identify potential locations to satisfy future layover needs. MassDOT identified 28 initial alternatives for this layover alternatives analysis. The first tier of screening evaluated the ability of each site to meet the overarching transportation and program objectives for the SSX project using criteria such as ease of land acquisition, effect on operations, and ability to integrate the site into the existing rail and roadway networks. Of the 28 candidate sites, 10 locations were carried forward to the second tier evaluation.



The second tier screening of layover alternatives involved two elements: 1) developing conceptual designs and preliminary operating plans, and 2) identifying infrastructure requirements for each site. Evaluation criteria included consistency with adopted plans and zoning, ability to meet location requirements, railroad operations, environmental impacts, site suitability, and capital improvements.

Of the 10 candidate sites, three locations best met the second tier screening criteria and advanced to the third tier of screening during the DEIR:

- Beacon Park Yard (BPY),
- Boston Transportation Department (BTD) Tow Lot, and
- Expansion of existing Readville – Yard 2.

The Secretary of the EEA requested the Widett Circle site also be carried forward for further evaluation in the DEIR.

MassDOT evaluated these four layover alternative sites and determined with FRA that no single site could meet the storage capacity and operational requirements to fully meet South Station's midday layover needs. During the third tier of screening, MassDOT tested combinations of these sites to determine their ability to best meet the layover needs of the SSX project, including assessing how each combination of sites would integrate with the existing four midday layover sites currently serving South Station. MassDOT developed multiple conceptual layouts for the four sites to identify the best combination of sites when compared to these screening criteria: ability to meet layover capacity and program needs, railroad operational requirements, and order-of-magnitude cost estimates.

MassDOT did not advance the BTD Tow Lot site for further consideration because of the considerable impacts its use would have on critical City operations, including a Department of Public Works garage and the lack of a suitable location to relocate these functions based on City of Boston needs. MassDOT and FRA selected the combination of BPY, expanded Readville – Yard 2, and Widett Circle to advance for further environmental analysis. MassDOT and FRA are performing a full evaluation of two potential layover facility sites, Widett Circle and Readville – Yard 2 as part of the SSX project. MassDOT is permitting the maximum possible capacity at both of these properties and recognizes that some combination of both Widett Circle and an expanded Readville – Yard 2 would be required to meet the projected future

midday layover needs. Widett Circle can provide layover space for up to 30 eight-car trainsets, and Readville – Yard 2 can be expanded to accommodate up to eight additional eight-car trainsets.

BPY in Allston, previously identified as a third layover facility alternative, is now being evaluated under MEPA review as part of the I-90 Allston Interchange Improvement project (I-90 project),[12] as adjustments to the I-90 interchange would likely require reconfiguration of the Beacon Park Yard (BPY) layover area. MassDOT decided to evaluate the impacts of using the BPY layover site in the I-90 project because the I-90 project, including the construction of the BPY layover facility, is expected to advance to construction prior to South Station and doing so would allow MassDOT to provide a more focused discussion of impacts in the affected community.

MassDOT will perform the NEPA process for the I-90 project following the MEPA DEIR review for that project. Although the NEPA class of action has not been formally identified, MassDOT anticipates that the I-90 project, including BPY, will be reviewed as an EA and led by the Federal Highway Administration (FHWA).

2.1.4. Joint Development Alternatives Analysis

The SSX project is primarily a transportation project aimed at expanding rail capacity South Station. However, due to the layout of the existing infrastructure, there is also an opportunity for future joint development at the site. Joint development was considered to be non-transportation related development located in the remainder of the land acquired from the USPS that would not be occupied by the proposed transportation infrastructure. MassDOT defined an area for expansion of the headhouse to accommodate the projected increase in passengers and the additional service enabled by expanding the tracks. Factors influencing the definition of that area included space needed for circulation and waiting areas, station area retail, fire and life safety requirements for access and egress, and the need to avoid areas dedicated for the SSAR project.

MassDOT studied the South Station site and its environs, examined land use and zoning restrictions, and took into consideration the existing and proposed expansion of the tracks and headhouse to formulate joint development alternatives. MassDOT also worked with the City of Boston to determine an approach to future development that would be commensurate with the area around South Station today as well as future plans for the neighborhood. MassDOT examined proposed joint development alternatives from a structural engineering perspective to determine the locations and sizes of columns needed to support joint development and also considered the ventilation requirements that would be necessary for development over the tracks.

MassDOT evaluated three joint development alternatives for the SSX project:

- **Joint Development Alternative 1 – Transportation Improvements Only**, would not include joint development. The design of the expanded headhouse and terminal will not preclude, and to the extent practicable, will support private transit-oriented development in the future.

- **Joint Development Alternative 2 – Joint Development Minimum Build**, would include future private development of approximately 660,000 square feet (sq ft) of mixed uses consisting of residential, office, and commercial uses, including retail and hotel, located in six separate buildings with open space and plazas.

[12] The I-90 Allston Interchange Improvement Project (I-90 project) site includes the I-90 interchange, land owned by Harvard University, former CSX rail yard, and an intermodal terminal known as Beacon Park Yard (BPY), as well as the MBTA's Framingham/Worcester branch of the MBTA's commuter rail line.

- **Joint Development Alternative 3 – Joint Development Maximum Build**, would include future private development of approximately 2,000,000 sq ft of mixed uses consisting of residential, office, and commercial uses, including retail and hotel uses, located in six separate buildings with open space and plazas. This alternative would also require an amendment to the Municipal Harbor Plan, modifying applicable Chapter 91 regulations.

In consultation with the City of Boston, MassDOT selected "Joint Development Alternative 1 – Transportation Improvements Only," an alternative that does not include joint development, thereby eliminating the environmental impacts of the project associated with those development scenarios. The design of the expanded headhouse and terminal will not preclude, and to the extent practicable, will support private transit-oriented development in the future. MassDOT continues to be committed to working with the City of Boston, interested stakeholders, and the general public to ultimately realize a vision of an expanded South Station integrated with transit-oriented development that contributes to a vibrant Downtown Boston with private development and non-transportation uses. However, with the City of Boston currently engaged in the Imagine Boston[13] planning process, it would be premature to speculate on the development component of SSX at this time.

2.1.5. Roadway Alternatives: Dorchester Avenue and Harborwalk

MassDOT evaluated alternatives for restoring Dorchester Avenue for public use and station access corresponding with the joint development alternatives. In all roadway alternatives, restoration of Dorchester Avenue would reconnect Dorchester Avenue to Summer Street as a public way. It would include landscaping and improved pedestrian and cycling connections and facilities (including adjacent sidewalks and crosswalks). Restoration also would include construction of an extension of the Harborwalk along reopened Dorchester Avenue. The Project Team evaluated following roadway alternatives for the restoration of Dorchester Avenue and the extension of the Harborwalk:

- **Roadway Alternative 1** – The Dorchester Avenue typical cross-section would extend approximately 100 feet from the Fort Point Channel, from the Harborwalk to the sidewalk/storefront zone. This alternative includes an expanded sidewalk/storefront zone to maximize pedestrian circulation. MassDOT selected Roadway Alternative 1 as the roadway alternative to advance, as it best complements the Transportation Improvements Only alternative.

- **Roadway Alternative 2** – The Dorchester Avenue typical cross-section would extend approximately 80 feet from the Fort Point Channel. The sidewalk/storefront zone would be reduced in order to accommodate future joint development that was considered as part of this alternative.

2.2. Build Alternative

Upon completion of each of the alternatives analyses discussed above, the Project Team selected the Build Alternative for the SSX project consisting of:

- The **Preferred Headhouse Alternative** is a combination of multiple headhouse alternatives that accommodates increased rail service; enhances the passenger experience at the station; improves the multimodal connections; and integrates the station with the adjacent neighborhoods and open spaces.

[13] Imagine Boston will be Boston's first citywide plan in 50 years. The planning process began in 2015 and is anticipated to be completed in 2017.

- The **Preferred Rail Alternative**, Rail Alternative 3, largely maintains the existing platform configuration while adding new tracks and platforms parallel to the existing ones and allows for maximum platform accessibility for incoming trains.
- The **Preferred Layover Alternative** consists of three layover facilities: Widett Circle, Readville – Yard 2, and BPY. As stated above, BPY is being permitted as part of a separate MassDOT project. MassDOT anticipates that a combination of all three facilities would be necessary to accommodate future service.
- The **Preferred Joint Development Alternative**, Transportation Improvements Only, does not include a specific joint development program, but does not preclude development on the site in the future.
- The **Preferred Roadway Alternative**, Roadway Alternative 1, is directly tied to the Preferred Joint Development Alternative and would extend approximately 100 feet from the Fort Point Channel, from the Harborwalk to the sidewalk/storefront zone. This alternative includes an expanded sidewalk/storefront zone to maximize pedestrian circulation.

The Build Alternative would:

- Acquire and demolish the USPS Facility;
- Reopen Dorchester Avenue and extend the Harborwalk;
- Expand the South Station Terminal; and
- Construct rail layover facilities.

2.2.1. Acquire and Demolish the USPS Facility

The Build Alternative would involve acquisition and demolition of the USPS GMF located on Dorchester Avenue adjacent to South Station, which would provide an approximately 14-acre site on which to expand South Station. Although acquisition and demolition of the USPS facility is part of the project for the purposes of environmental review, the relocation of USPS operations is not part of the project. The USPS would determine the future location(s) to which its operations would be relocated, and the relocation would be subject to its own environmental review as required by federal regulations. Should the acquisition of the USPS facility advance before funding is identified for the entire project, MassDOT may consider moving forward with the demolition of the USPS and the reopening of Dorchester Avenue (along with associated Harborwalk improvements) before other project components in order to provide improved public access along the Fort Point Channel.

2.2.2. Reopen Dorchester Avenue and Extend the Harborwalk

Currently, access along the majority of Dorchester Avenue in the immediate vicinity of South Station is restricted for use by the USPS in support of its operations, with very limited public access allowed for USPS customers and MBTA commuters. The project would restore approximately 0.5 miles of Dorchester Avenue for public use and provide multiple access points into the expanded station from Dorchester Avenue. These access points would allow passengers multiple station arrival and departure options and would provide connectivity through the station between Atlantic Avenue and Dorchester Avenue and the waterfront. Restoring Dorchester Avenue includes landscaping and improved pedestrian and cycling connections and facilities, including adjacent sidewalks and crosswalks. Figure 2-2 presents a typical cross-section for Dorchester Avenue.

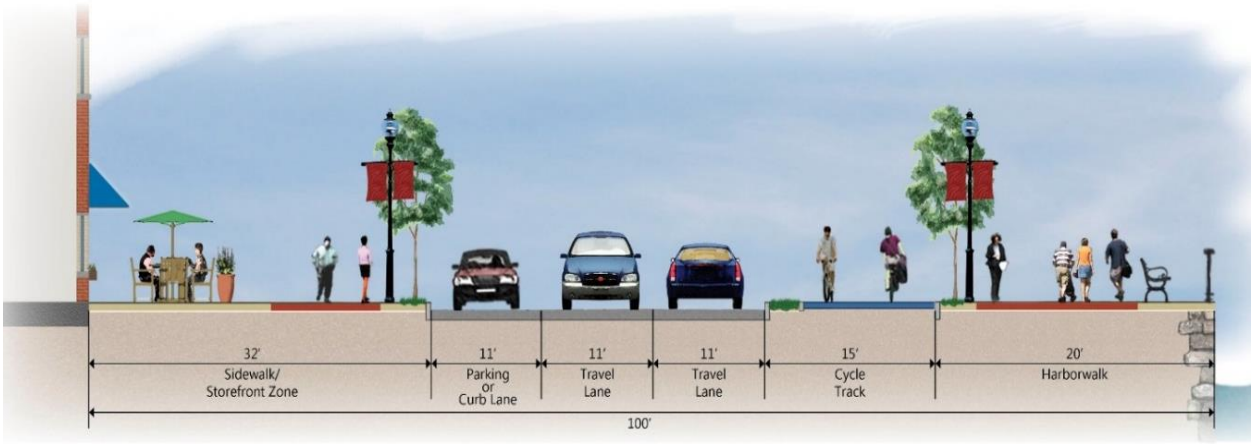


Figure 2-2 — Dorchester Avenue – Typical Cross-Section (Proposed) Looking Northeast

Restoring Dorchester Avenue would include construction of a 0.5-mile section of the Harborwalk network. The Harborwalk is a 40-mile public walkway extending along the Boston Harbor waterfront. As depicted in Figure 1-1, the Harborwalk extends to the north and south along Fort Point Channel in the vicinity of the project. There is currently no Harborwalk along Dorchester Avenue between Summer Street and Rolling Bridge Park. The project's Harborwalk extension would close one of the last remaining gaps in an otherwise continuous waterfront walkway. The sidewalk zone would include landscaping and street furniture, and would add more than one acre of open space to the area.

2.2.3. Expand the South Station Terminal

The project would include improvements to the existing rail infrastructure at South Station Terminal and the approach interlockings.[14] The aging rail infrastructure at the Terminal, including tracks, signals, and communication, have contributed to service delays and upgrading these systems will have a direct improvement to service reliability and capacity. Modifications to the Tower 1 Interlocking (Figure 1-2), as well as one approach interlocking, would be required in order to reduce conflicting movements through the terminal area and improve efficiencies.

The Build Alternative would expand the South Station Terminal, adding seven new tracks and four platforms for a total of 20 tracks and 11 platforms. Figures 2-3 and 2-4 depict proposed conditions at the South Station site. The Build Alternative assumes three berthing tracks to accommodate Amtrak's desired length (1,050 feet) and 14 berthing tracks to accommodate the MBTA's desired length (850 feet). Additional analysis is neccesary during preliminary engineering to determine exact berthing lengths in order to accommodate Amtrak and MBTA berthing standards. Reconfiguration of several existing tracks and platforms would be required and platform lengths would be designed to meet Amtrak's and the MBTA's future berthing requirements.[15] The proposed platform upgrades would improve existing access and emergency egress measures. The new tracks, platforms, and station expansion would be aligned so that it would not preclude any future air rights development.

[14] An interlocking is a segment of railroad infrastructure comprised of track, turnouts, and signals linked (interlocked) in a way that allows trains to move from one track to another, or across tracks safely, preventing conflicting train movements. The interlockings enable train dispatchers to route incoming trains over a variety of tracks to/from available station tracks. An approach interlocking is an interlocking leading up to a terminal interlocking and station. Typically, approach interlockings are only a short distance from the terminal and allow trains to switch tracks leading into the terminal to prepare to berth at specific platform tracks. Making these movements at the approach interlocking instead of at the terminal also allows for more efficient operations as the crossing movements can be made at higher speeds while avoiding conflicting movements.

[15] The future berthing requirement is the length of track adjacent to the platform required to allow passengers to enter or exit the train cars. This length is based on potential future trainset length.

The expansion of the South Station Terminal would include new structures totaling approximately 385,000 sq ft, including an expanded headhouse, with a major station entrance along Dorchester Avenue, to provide larger passenger circulation and waiting areas as well as amenities such as retail and food outlets. The station expansion would also include a mid-platform elevated concourse. The concourse would span above the new and existing platforms, located at the midpoint of the platforms' north-south axis. The concourse would provide a direct connection to the existing bus terminal, a direct connection to the existing headhouse, and would also provide a mid-block pedestrian connection between Atlantic Avenue and the newly reopened Dorchester Avenue. The vertical connection between the elevated concourse and the historic headhouse would be coordinated with the vertical elements planned as part of the SSAR project.

The proposed station would have two access points on Dorchester Avenue. The more prominent one would be proximate to the Dorchester Avenue and Summer Street intersection and would provide direct access to the trackhead and the existing headhouse. The other would provide direct access to the mid-platform elevated concourse. Both access points would be designed to integrate with potential future development on the remaining land along Dorchester Avenue.

2.2.4. Construct Rail Layover Facilities

The Build Alternative would provide additional midday layover space at two sites to meet future layover facility program needs and operational requirements.[16,17,18] MassDOT would construct a new layover facility at the Widett Circle site for up to 30 eight-car trainsets, as shown in Figure 2-5. Support facilities would include a crew building, support shed, and power substation. Section 3.12, *Land Use and Zoning*, addresses project property land use and ownership in more detail. The Build Alternative would expand the existing Readville – Yard 2 layover facility by up to eight eight-car trainsets, for total layover site capacity of 18 trainsets, as presented in Figure 2-6. Support facilities would include expansion of the existing crew building and support shed, and construction of a power substation.

2.2.5. Conceptual Cost Estimate

The cost estimate included in the October 2014 DEIR was based upon conceptual designs developed for each major element of the project to support environmental documentation. The $1.43 billion cost estimate for the TIO Alternative in the DEIR is in year 2014 dollars. As project sponsor, MassDOT is continuing to refine the cost estimate as the design progresses.

2.3. No Build Alternative

As required by the CEQ regulation Section 1502.14(d) MassDOT analyzed a No Build Alternative. The No Build Alternative consists of the existing transportation facilities and services and all future funded transportation improvement projects in the vicinity of South Station. It represents the base condition against which the future Build Alternative is measured.

2.3.1. South Station Site

In the No Build Alternative, South Station would remain as it currently exists, with 13 tracks and eight platforms. With the exception of activities conducted as part of the MBTA's State of Good Repair (SGR) program, the terminal operations, including Tower 1 and the approach interlocking configuration,

[16] BPY in Allston, previously identified as a third layover facility alternative in the DEIR, is now subject to environmental review as part of the I-90 project (EEA No. 15278). The I-90 project is further refining the concept design and environmental evaluation of BPY, which is occurring concurrently with the SSX project.

[17] A detailed layover facility site alternatives analysis is included in Appendix C of the Massachusetts Department of Transportation, *Environmental Notification Form*, March 2013. https://www.massdot.state.ma.us/southstationexpansion/Documents.aspx

[18] MassDOT and the MBTA are evaluating an additional midday layover facility at BPY, as part of the state environmental review process for the I-90 project. That facility, which is particularly well situated for service arriving from the west of Boston, is expected to be constructed and in service in advance of the ultimate construction of the SSX project.

would remain as they currently exist. Delays would become more frequent and the OTP for South Station would decline further below the MBTA's and Amtrak's OTP goals. Expanded Amtrak and MBTA service operations would be unreliable and extremely difficult to operate.

In the No Build Alternative, the USPS GMF would not be relocated. The majority of Dorchester Avenue at the site would remain in private use by the USPS in support of its operations. Only a minor portion of the roadway would remain available for public use.[19]

Prior to the expansion of South Station, it is anticipated that the site will include the planned SSAR project, consisting of approximately 1.8 million sq ft of mixed-use development to be located directly above the railroad tracks at the existing South Station headhouse. The SSAR[20] project will include expansion of the existing bus terminal over the existing tracks and platforms towards the existing headhouse with multiple mid-rise buildings over the existing and expanded bus garage having street access along Atlantic Avenue. The SSAR project has not yet begun construction. Nonetheless, for environmental review of the SSX project, the SSAR project is assumed to be built for the future year analysis, and is part of the SSX project's No Build Alternative.

In the No Build Alternative, there would be no public access to the waterfront at the South Station site. The Harborwalk on the western side of Fort Point Channel would remain fragmented. The privately-owned Dorchester Avenue that fronts the USPS facility currently creates a gap in the Harborwalk, between Rolling Bridge Park (to the south) and the Federal Reserve Bank Building (to the north). Similarly, bicycle infrastructure facilities in the vicinity of the South Station site would remain separated from other existing and proposed bicycle facilities, including the South Bay Harbor Trail and the Summer Street Corridor cycle track. Figure 1-1 shows the connectivity of the Harborwalk. In the No Build Alternative, roadway congestion in the immediate vicinity of South Station, especially curbside congestion along Atlantic Avenue, would lead to an increase in traffic volumes associated with area-wide growth.

2.3.2. Layover Facilities

The Widett Circle layover facility site, totaling approximately 30.2 acres, is located in South Boston along the MBTA's Fairmount Line, approximately one track-mile from South Station, as shown in Figure 2-5. It is comprised primarily of two parcels in private ownership, known as the Cold Storage and Widett Circle properties. The Cold Storage property, located at 100 Widett Circle, currently houses a temperature-controlled food storage and distribution facility, owned by Art Mortgage Borrower Propco 2006-2 LP, and operated by Americold/Crocker & Winsor Seafoods. Widett Circle, located primarily at 1 and 2 Foodmart Road, is owned by The New Boston Food Market Development Corporation and is made up of approximately 30 units leased to multiple businesses in the food processing, food storage, and food logistics industry. In the No Build Alternative, it is anticipated that the Widett Circle site would remain in private ownership, occupied by businesses in the food processing, food storage, and food logistics industry.

The Readville – Yard 2 layover facility site, totaling approximately 17.5 acres, is located in the Readville section of Hyde Park, at the intersection of the NEC and the MBTA's Fairmount Line, approximately 8.8 track-miles from South Station, as shown in Figure 2-6. Owned by the MBTA, Readville – Yard 2 is currently a maintenance repair facility and the largest midday layover yard used by the MBTA for its south side commuter service. In the No Build Alternative, the MBTA would continue use of Readville – Yard 2 for the storage of 10 trainsets to support South Station operations.

[19] Extending south of Summer Street, generally unrestricted public access currently is provided along approximately 400 feet of Dorchester Avenue for customer use of USPS facilities. The MBTA also maintains a permanent easement of approximately 200 feet along Dorchester Avenue for pedestrians and vehicles.

[20] The SSAR project was approved by the Secretary of the Executive Office of EEA in 2006 (EEA No. 3205/9131).

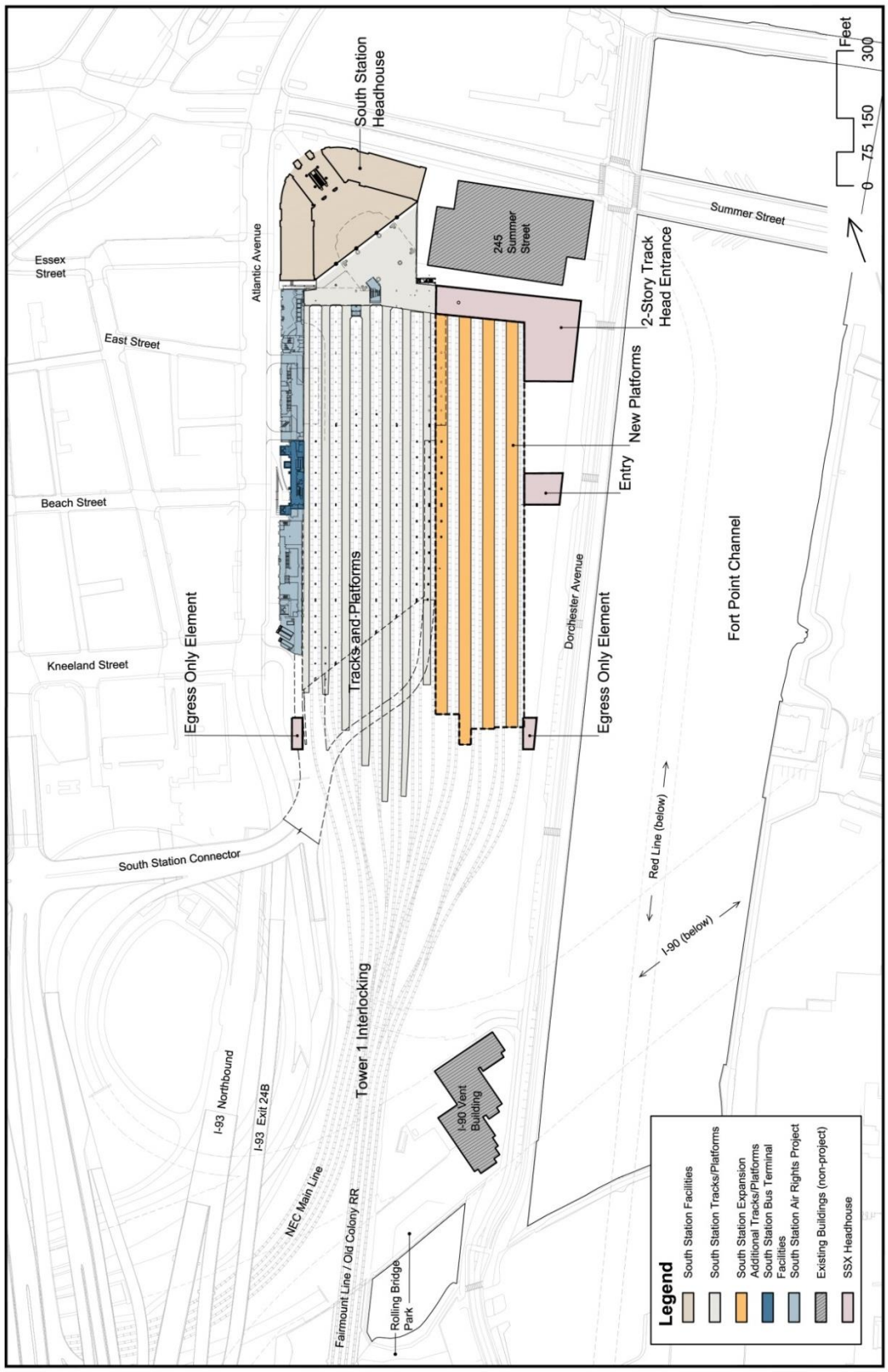


Figure 2-3 — South Station Site – Proposed Platform Level

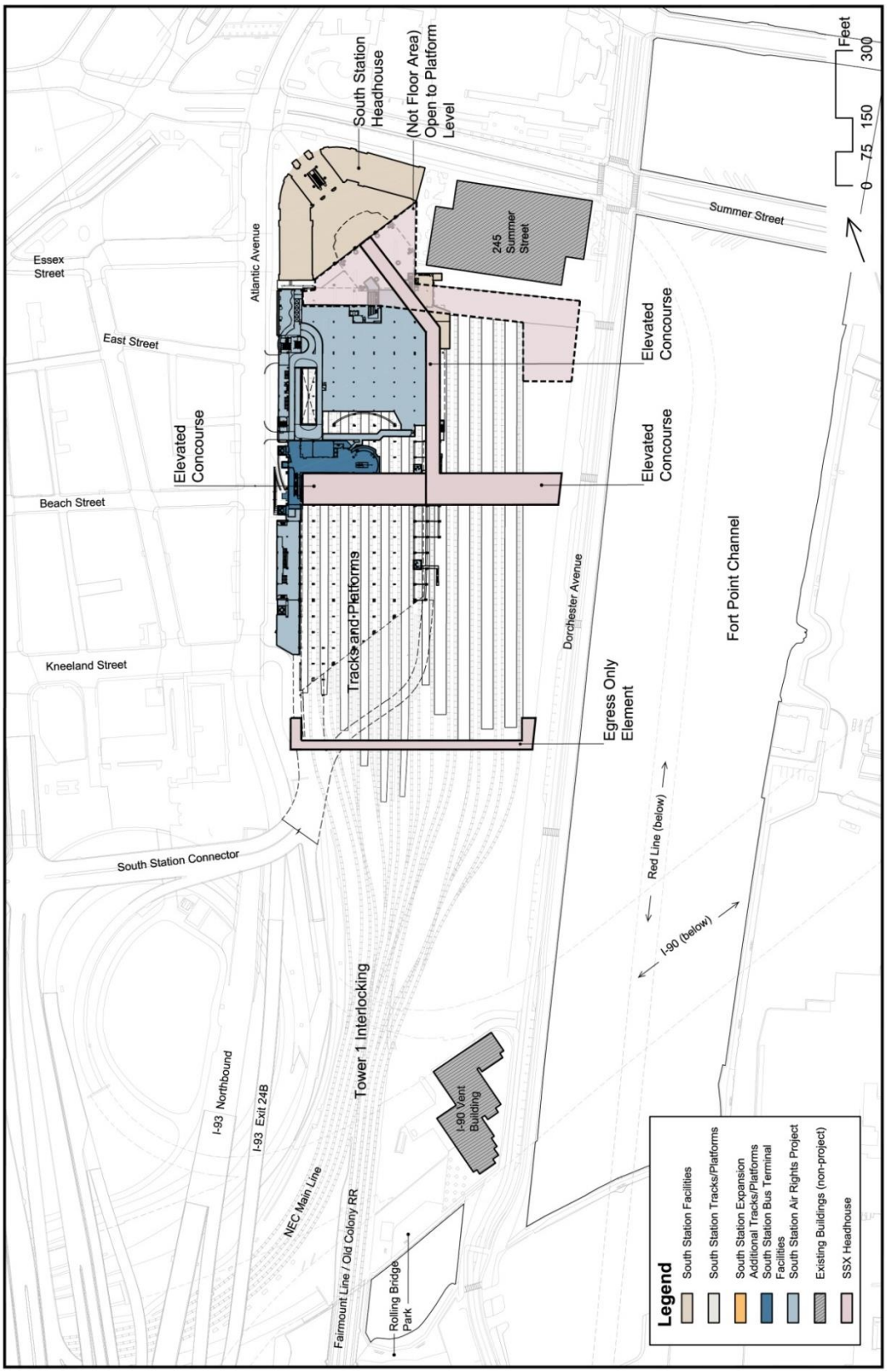


Figure 2-4 — South Station Site – Proposed Elevated Concourse Level

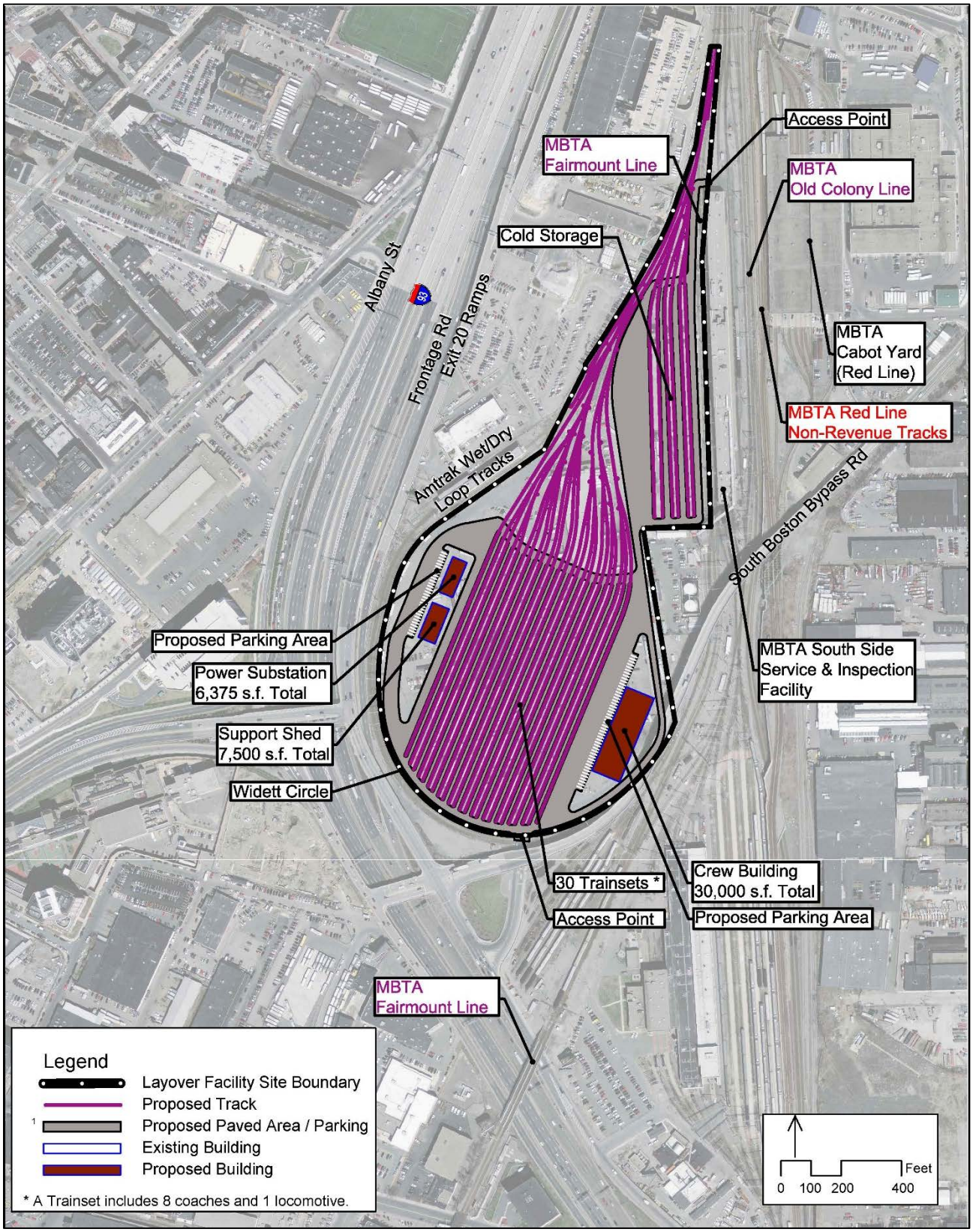


Figure 2-5 — Widett Circle – Concept Plan

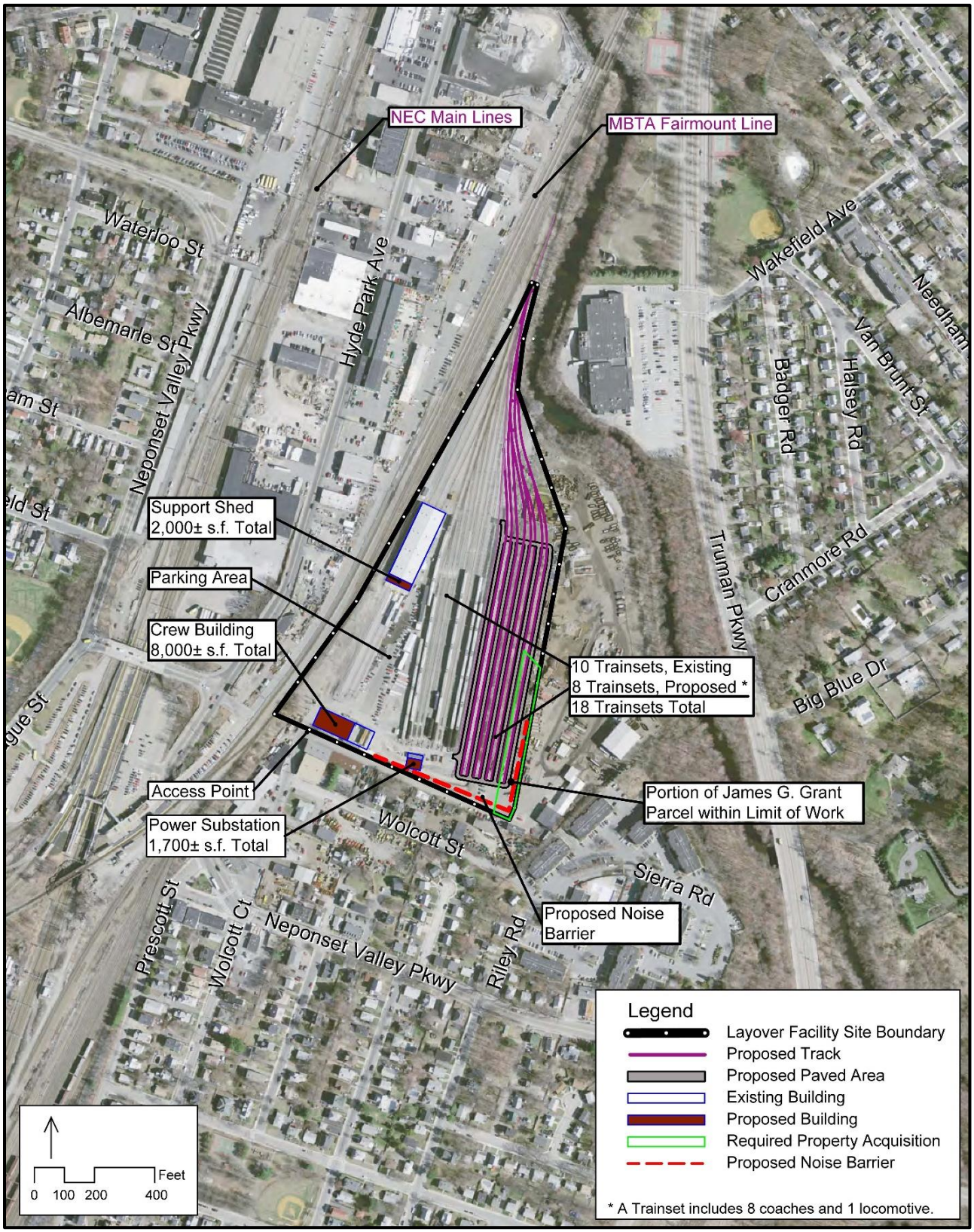


Figure 2-6 — Readville – Yard 2 – Concept Plan

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Chapter 3 – Affected Environment and Environmental Consequences

3.1. Introduction

This chapter provides a brief overview of the regulatory context and methodology to assess effects on environmental resources; describes existing conditions in the Affected Environment; assesses the potential environmental impacts to the natural and social environment of the No Build and Build Alternatives defined in Chapter 2; and identifies mitigation measures where relevant. Consistent with FRA's *Procedures for Considering Environmental Impacts*,[1] evaluated resources include: air quality, water quality, noise and vibration, wetlands, floodplains, the coastal zone, energy, climate change, aesthetics and design quality, transportation, possible barriers to handicapped and elderly, land use and zoning, socioeconomic impacts, environmental justice (EJ), public health and safety, parks and recreational areas, cultural resources, construction period impacts, and indirect and cumulative impacts. Environmental resources not present within the study area (and, therefore, not evaluated in this document) include threatened and endangered species, use of natural resources (other than energy), and ecological systems. MassDOT evaluated these resources in DEIR Appendix 5, *Natural Resources Technical Report*.[2] As reported in this documentation, the Project Team consulted with the U.S. Fish and Wildlife Service and National Marine Fisheries Service in accordance with the U.S. Endangered Species Act (16 U.S.C. 1531-1543) and Section 7 requirements at 16 U.S.C. 1536.[3] Agency correspondence is provided in Appendix C of this EA.

A full environmental evaluation of these resources, conducted during the state review process, is detailed in documents on the SSX project website: https://www.massdot.state.ma.us/southstationexpansion.

3.2. Air Quality

The federal, state, and local regulations applicable to air quality at the project sites include the federal Clean Air Act, as amended (CAA and CAAA), and the established set of National Ambient Air Quality Standards (NAAQS) for various criteria pollutants; the Massachusetts Ambient Air Quality Standards (MAAQS), which are identical to the NAAQS; U.S. Environmental Protection Agency (EPA) General Conformity Rule (40 CFR 51 Subpart W); and U.S. EPA Determining Conformity Of Federal Actions To State Or Federal Implementation Plans (40 CFR 93).

Air quality assessments prepared for the SSX project included regional and local components, each with specific study areas. The local component assessment included a review of nearby traffic intersections that would be affected by motor vehicle traffic associated with the South Station site and the layover facility sites. Additionally, MassDOT conducted a regional analysis of SSX project-related direct and indirect emissions. An emission inventory is a listing, by source, of the amount of air pollutants discharged into the atmosphere for a given time period (typically one year). MassDOT and FRA (the Project Team) prepared project-related emissions inventories for the NEPA Air Quality analysis to estimate emissions of volatile organic compounds (VOCs), oxides of nitrogen (NO_x), carbon monoxide (CO), particulate matter up to

[1] Federal Railroad Administration. *Procedures for Considering Environmental Impacts, Federal Register 28545, Vol. 64, No. 101, Wednesday, May 26, 1999. https://www.fra.dot.gov/eLib/Details/L02710*

[2] Additional information is provided in Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report*, *Appendix 5, Natural Resources Technical Report*. October 2014. Available at: http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

[3] U.S. Endangered Species Act (16 U.S.C. 1531-1543), Section 7 requirements at 16 U.S.C. 1536, December 1973. Accessed October 2012. http://epw.senate.gov/esa73.pdf.

10 and 2.5 microns in diameter ($PM_{10}/PM_{2.5}$), and sulfur dioxide (SO_2). The full air quality evaluation is provided in the DEIR Appendix 10, *Air Quality Technical Report*.[4]

3.2.1. Existing Conditions

The Massachusetts Department of Environmental Protection (MassDEP) maintains a statewide network of monitoring stations that continuously measure pollutant concentrations in the ambient air. These stations provide data to assess compliance with the NAAQS and the MAAQS and to evaluate the effectiveness of pollution control strategies. For the most recently available full year of data (2012) at representative monitoring stations nearest to the SSX project, there were two exceedances of the 8-hour Ozone (O_3) standard and two exceedances of the annual Nitrogen Dioxide (NO_2) standard. There were no exceedances in the air quality study area of any other NAAQS or MAAQS in 2012.

U.S. EPA designates geographic regions in which measured ambient concentrations of air pollutants have exceeded the NAAQS as nonattainment areas. Areas of the country that have measured pollutant concentrations that are less than the NAAQS are designated attainment areas. Areas that have attained the standards after a period of nonattainment and that have plans in place to reduce emissions are classified as maintenance areas. The SSX project is located in Boston, Suffolk County, which is part of the Boston-Lawrence-Worcester Eastern Massachusetts Nonattainment area. The Commonwealth of Massachusetts was previously designated as a Serious Nonattainment Area with respect to the 1997 8-hour ozone standard of 0.08 parts per million (ppm). However, all air quality monitors now show that Massachusetts meets the 1997 ozone standard statewide. U.S. EPA updated the 8-hour ozone standard to 0.075 ppm in 2008, and designated Massachusetts as in attainment statewide except for Dukes County (Martha's Vineyard) in 2011.

On January 30, 1996, U.S. EPA published a direct final rule approving Massachusetts State Implementation Plan (SIP) revision request to redesignate the Boston metropolitan area Carbon Monoxide (CO) nonattainment area to attainment. This area includes the communities of Boston, Cambridge, Chelsea, Everett, Malden, Medford, Quincy, Revere, and Somerville. The direct final rule (61 Federal Register 2918) became effective April 1, 1996.

Massachusetts redesignation request, approved in the January 30, 1996 direct final rule, also included a maintenance demonstration and contingency plans, which outline Massachusetts control strategy for maintenance of the CO NAAQS. The maintenance plan provisions under Section 175A of the CAA require that maintenance of the relevant NAAQS be provided for at least 10 years after redesignation, followed by an additional 10-year maintenance period.

The 20-year maintenance period for the Boston metropolitan CO maintenance area expired on April 1, 2016. Therefore, the Boston metropolitan area is no longer required to demonstrate General Conformity for the Boston metropolitan CO maintenance area. However, the rest of the maintenance plan requirements continue to apply in accordance with the SIP.

[4] Additional information is provided in Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report*, *Appendix 10, Air Quality Technical Report*. October 2014. Available at: http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

3.2.2. Environmental Consequences

No Build Alternative

In the No Build Alternative, train, car, and bus volumes will increase over time. However, large decreases in pollutant emissions in the vicinity of South Station between 2012 and 2025 are anticipated due to significant reductions in U.S. EPA-mandated pollutant emission standards for locomotive and motor vehicle engines[5]. These significant reductions in emission factors would offset the growth of motor vehicle traffic and train volumes in the area around South Station. Small increases in pollutant emissions in the vicinity of South Station between 2025 and 2035 are anticipated, due to relatively small reductions in U.S. EPA pollutant emission standards for locomotive and vehicle engines and modest increases in motor vehicle volumes. These small reductions in emission standards would not completely offset the growth of traffic and train volumes in the area around South Station.

In the No Build Alternative, no MBTA trains would lay over at the Widett Circle site. Thus, pollutant emissions will not change at this site. There are 10 trains per day currently using the Readville – Yard 2 site for layover; these trains would continue to use Readville – Yard 2 in the No Build Alternative.

Build Alternative

Project-related impacts during routine operations would include emissions generated by locomotives entering and leaving the South Station Rail Terminal and by related layover facilities and vehicular traffic. Section 3.18 discusses MassDOT's approach to mitigate temporary construction-related air quality impacts. Table 3-1 presents the sum of total project-related criteria pollutant emissions at the South Station and layover sites.

Table 3-1 — Total Project-Related Criteria Pollutant Emissions at the South Station and Layover Sites

Project Alternative	VOCs (tpy)	NOx (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	CO (tpy)	SO_2 (tpy)
2012 Existing Conditions	7.36	27.74	1.90	1.21	84.61	0.49
2025 Conditions						
No Build Alternative	2.77	8.57	1.39	0.56	69.08	0.49
Build Alternative	2.85	8.98	1.43	0.57	70.40	0.56
2035 Conditions						
No Build Alternative	2.71	8.02	1.48	0.57	73.24	0.50
Build Alternative	2.79	8.49	1.51	0.60	74.97	0.57

tpy = tons per year

Based on the results of the emissions inventory analysis for the air quality study area, the Build Alternative would result in slightly higher emissions than the No Build Alternative and, with the exception of SO_2, total emissions in 2025 and 2035 are significantly lower than the 2012 baseline for all pollutants. The small increases in pollutant emissions in the vicinity of the South Station site or the layover facility sites due to the project would not lead to exceedances of the MAAQS and NAAQS and no adverse air quality impacts are expected to occur as a result of the project. As presented in DEIR Appendix 10, *Air Quality Technical Report,*[6] the result of other air quality-related emissions analyses includes:

[5] 40 CFR 88.104-94 = Clean-fuel vehicle tailpipe emission standards for light-duty vehicles and light-duty trucks and 40 CFR 88.311- 93 § 88.311-98 = Emission standards for Inherently Low-Emission Vehicles.

[6] Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report*, *Appendix 10, Air Quality Technical Report*. October 2014. Available at: http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

- **CO Status** – The CO modeling analysis included four selected traffic intersections at the South Station site (Atlantic Avenue at Seaport Boulevard, Atlantic Avenue at Summer Street, Surface Road at Kneeland Street, and Dorchester Avenue at West Broadway/Traveler Street), one at the Widett Circle site (Widett Circle at Widett Circle Access Road), and one at the Readville – Yard 2 site (Hyde Park Avenue/Neponset Valley Parkway/Wolcott Court/Wolcott Square.) The selected air quality study areas indicated that increases in project-related motor vehicle traffic volumes would not lead to exceedances of the NAAQS or MAAQS for CO, and no adverse air quality impacts are expected to occur as a result of the construction or implementation of the SSX project.

- **Mobile Source Air Toxics (MSATs) Status** – The MSAT analysis indicated there would be approximately a 2% increase in MSAT emissions due to the SSX project compared to MSAT emissions from the No Build Alternative. These small increases are unlikely to result in adverse health effects within the South Station study area. When compared to the MSAT emissions for the 2012 Existing Conditions, the MSAT emissions for the Build Alternative in 2025 and 2035 are lower by about 62% each.

- **Diesel Particulate Matter (DPM) Status** – A qualitative assessment of DPM emissions was performed for this project. DPM is part of a complex mixture that makes up diesel exhaust, which is emitted from a broad range of diesel engines including trucks, buses, and cars; and off road diesel engines that include railroad locomotives. For each year, the Build Alternative would produce more DPM emissions than the No Build Alternative. This is because all trains in the MBTA's fleet will either be "new" or "rebuilt" to meet the most stringent U.S. EPA Locomotive standards, which apply to all locomotives, which are built or rebuilt after 2015. By 2025 (the opening year of the proposed project), all locomotives must comply with these standards. Therefore, the only changes to emissions would be due to the increase in locomotive operations. The Build Alternative is expected to have a significant reduction of DPM compared to the 2012 baseline.

- **Ultrafine Particulates (UFPs) Status** – UFPs refer to particulate matter that is generally less than 100 nanometers in size. Compared with $PM_{2.5}$, the ultrafine particles would be 0.1 microns and smaller or roughly 25 times smaller than the regulated $PM_{2.5}$. The qualitative assessment of UFPs performed for this project showed that project-related UFP emissions are expected to increase over time. For each year, the Build Alternative would produce more UFPs than the No Build Alternative. The increase in all emissions is due to the increase in train volumes (operations). However, the Build Alternative is expected to have a significant reduction of DPM compared to the 2012 baseline.

3.2.3. Mitigation Measures

The air quality analyses demonstrate that emissions of criteria pollutants in the Build Alternative would be in conformance with NAAQS; would not increase in frequency or severity any existing violations; and would not create future violations. The slight increases in MSAT emissions associated with the Build Alternative would be unlikely to result in adverse health effects to the neighborhood areas adjacent to South Station. No significant impacts are anticipated. Therefore, no mitigation of project-related emissions would be required.

3.3. Noise and Vibration

Federal, state, and local regulations applicable to noise and vibration at the project sites include FTA's *Transit Noise and Vibration Impact Assessment* Guidance Manual;[7] FRA's *High-Speed Ground Transportation Noise and Vibration Impact Assessment;*[8] and the City of Boston's Noise Ordinance.[9] In general, FRA adheres to the methodology described in the FTA guidance manual for assessing noise and vibration for FRA funded rail projects.

For the noise and vibration analysis, the Project Team:

- Identified applicable federal criteria and identified state and local noise and vibration criteria and ordinances;
- Compared noise levels under the future year 2035 Build Alternative with the FTA noise criteria for each identified noise-sensitive receptor location;
- Applied FTA criteria to assess annoyance due to vibration and ground-borne noise from transit operations;
- Evaluated the extent and severity of noise impacts from transit projects using the methods and procedures contained in the FTA *Transit Noise and Vibration Impact Assessment* guidance manual;
- Analyzed construction impacts potential for building damage; and
- Applied FTA criteria for extremely vibration sensitive equipment to sensitive land uses.

Additional information on this analysis can be found in DEIR Appendix 11, *Noise and Vibration Technical Report*.[10]

3.3.1. Existing Conditions

South Station

To establish the existing noise levels within the project area, the Project Team took noise measurements at eight locations within or adjacent to the South Station site, representing residential and non-residential sensitive noise receptors potentially affected by the project. The primary sources of noise in the area are the train operations at South Station, especially from the idling diesel locomotives, and local street traffic on Atlantic Avenue and Summer Street. Table 3-2 presents the existing noise measurements in and around the South Station site. Figure 3-1 shows some typical A-weighted sound levels for both transit and non-transit sources, measured in A-weighted Decibels (dBA).

[7] Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment.* (Report No. FTA-VA-90-1003-06). May 2006.

[8] Federal Railroad Administration. *High-Speed Ground Transportation Noise and Vibration Impact Assessment*. September 2012.

[9] City of Boston Municipal Code, Chapter 16, Section 26.

[10] Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report, Appendix 11, Noise and Vibration Technical Report. October 2014. http://www.massdot.state.ma.us/Portals/25/docs/DEIR/appendix/11-Appendix11.pdf*

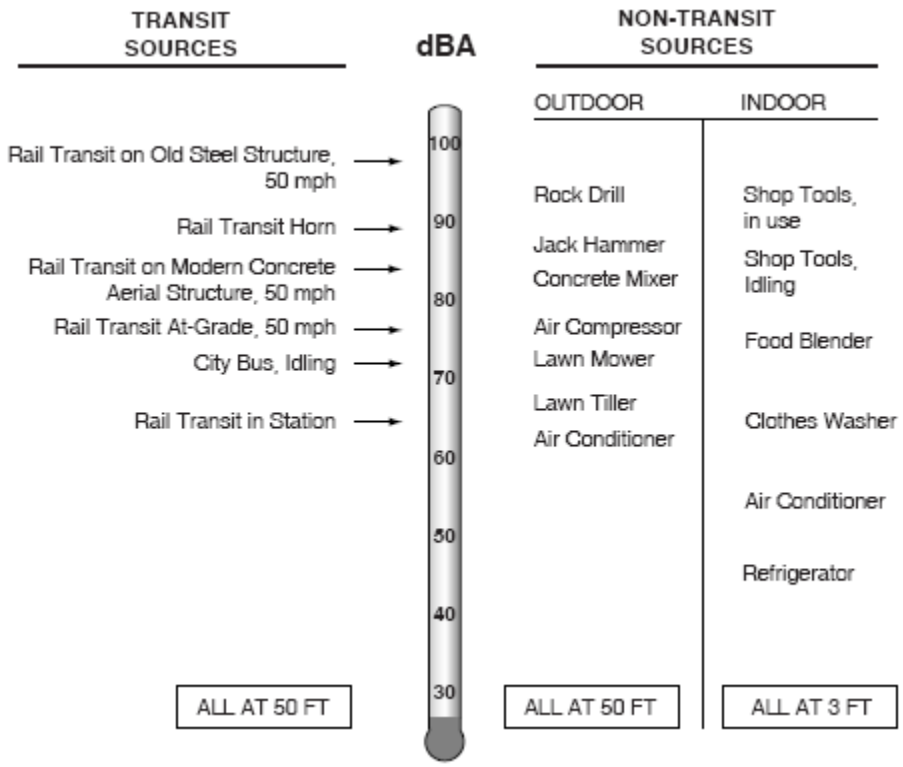

Figure 3-1 — Typical A-Weighted Sound Levels

In addition to the noise measurements, the Project Team took vibration measurements at four locations at the South Station site, including: the South Station headhouse; the east side of South Station near Track 13; the west side of South Station near Track 1; and a location immediately adjacent to the site, 245 Summer Street, which operates vibration-sensitive computer equipment in the basement of the building. Because of the slow speed of the trains entering and leaving South Station, typical vibration levels at the nearest residential receptors along Atlantic Avenue are below the FTA impact criterion of 72 vibration decibels (VdB) for human annoyance. Typical vibration levels at the nearest residential receptors along Atlantic Avenue are below 55 VdB from the slow-moving diesel locomotives on Track 1 (nearest to these receptors) at South Station.

A detailed indoor and outdoor vibration measurement program was conducted at 245 Summer Street, which operates vibration-sensitive computer equipment in the basement of the building, using more sensitive equipment to measure the indoor vibration levels. Vibration levels were below 60 VdB at a distance of 75 feet from the closest tracks. These levels are below the FTA outdoor criterion of 65 VdB for buildings with vibration-sensitive equipment. Vibration measurements obtained inside the basement at 245 Summer Street, adjacent to the vibration-sensitive computer equipment, indicated that vibration was not due to the trains, but rather due to the mechanical equipment located inside the basement.

Table 3-2 — Existing Measured Noise Levels at South Station Site and Vicinity

Description	Approximate Distance to Nearest Rail Line	Peak-Hour Leq[a]	Midday Leq	Nighttime Leq	Ldn Level[b]
South Station Headhouse	25 feet	72.3 dBA	---	---	---
245 Summer Street	50 feet	71.3 dBA	---	---	---
East Side of South Station – Track 13	15 feet	82.0 dBA	---	---	---
West Side of South Station – Track 1	15 feet	69.1 dBA	---	---	---
Atlantic Avenue at East Street	175 feet	67.8 dBA	67.0 dBA	64.4 dBA	69.3 dBA
Atlantic Avenue at Kneeland Street	175 feet	73.0 dBA	71.0 dBA	65.0 dBA	71.2 dBA
Federal Reserve Building	340 feet	64.6 dBA	---	---	---
Across Fort Point Channel at Necco Street	950 feet	56.4 dBA	57.9 dBA	54.0 dBA	59.2 dBA

a Leq is the A-weighted sound level, which averages the background sound levels with short-term transient sound levels and provides a uniform method for comparing sound levels that vary over time.
b The 24-hour Day-Night Average Sound Level (Ldn) is determined from the measured peak hour, midday, and nighttime hourly Leq noise levels. The Ldn noise level is only required for residential receptors or receptors where people normally sleep such as hospitals and hotels.
--- indicates that midday and nighttime hourly Leq noise measurements were not obtained because there were no residential receptors at this location.

Layover Facilities

At the Widett Circle site, the primary sources of noise are the trucks operating at the major warehouse facility, trains at the Southampton Rail Yard, and traffic noise from I-93. The nearest residential receptors are located along Albany Street south of the Widett Circle layover facility and across I-93. Noise levels at the noise measurement location on Albany Street are due to local street traffic on Albany Street and the traffic noise on I-93. The measured Ldn noise level at this location was 68.2 dBA. The Ldn (or day/night noise level) represents the average noise level over a 24-hour period with a 10-dBA penalty added to the nighttime hours (between 10 PM and 7 AM) to account for people's increased sensitivity to noise while trying to sleep. At the Readville – Yard 2 site, the primary noise source at the noise measurement location is the midday MBTA train operations at Readville – Yard 2. The measured Ldn noise level at the nearest residential receptor on Walcott Street was 57.9 dBA, with a peak-hour Leq level of 62.0 dBA during midday train layover operations. The Leq (or equivalent noise level) represents a level of constant noise that has the same acoustic energy as the fluctuating noise level over a given period of time such as an hour. Based on the measurement results at South Station, the Project Team did not take vibration measurements at these layover facility sites because it was assumed that, similar to the measurements at South Station, the slow speed of the trains traveling into and out of the sites would not result in significant vibration levels (above the FTA annoyance criterion of 72 VdB). The Project Team estimated the vibration levels at the nearest residential receptor on Walcott Street from the existing train operations at the Readville-Yard 2 layover facility to be 55 VdB.

3.3.2. Environmental Consequences

The FTA noise impact criteria are delineated into two categories: moderate impact and severe impact. The moderate noise impact threshold defines areas where the change in noise is noticeable, but may not be sufficient to cause a strong, adverse community reaction. The severe noise impact threshold defines the noise limits above which a significant percentage of the population would be highly annoyed by new noise. For each identified noise-sensitive receptor location at the SSX project sites, the Project Team compared noise levels in

the Build Alternative with the FTA noise criteria to determine potential impact.[11] Additional details on the impacts analysis can be found in DEIR Appendix 11, *Noise and Vibration Technical Report*.[12]

South Station

In the absence of mitigation, noise impacts from the Build Alternative would be expected to occur at noise sensitive receptor locations across Fort Point Channel due to the removal of the USPS facility along Dorchester Avenue, which currently acts as an effective noise barrier. With the removal of the USPS facility, there would be a direct sound propagation path to sensitive noise receptors across Fort Point Channel at Necco Street. As a result, the 24-hour Ldn (day-night average) noise level across Fort Point Channel would exceed the FTA moderate impact criteria. In addition, the peak-hour Leq (hourly equivalent) noise level at 245 Summer Street would also exceed the FTA moderate impact criteria. Tables 3-3 and 3-4 show the results of the noise modeling analysis and impact assessment for the peak-hour Leq noise level for non-residential receptors, and the 24-hour Ldn noise level for residential receptors.

Table 3-3 — Results of the Noise Modeling Analysis for the Peak-hour Leq Noise Level at Non-Residential Receptors

Description	2013 Calculated Peak-Hour Leq Level	2035 Calculated Peak-Hour Leq Level	Impact Assessment
245 Summer Street	69.4 dBA	71.1 dBA	Moderate Impact
Atlantic Avenue at East Street	63.6 dBA	64.4 dBA	No Impact
Atlantic Avenue at Kneeland Street	71.7 dBA	68.5 dBA	No Impact
Federal Reserve Building	59.2 dBA	61.9 dBA	No Impact
Across Fort Point Channel at Necco Street	57.3 dBA	59.8 dBA	No Impact

Table 3-4 — Results of the Noise Modeling Analysis for the 24-hour Ldn Noise Level at Residential Receptors

Description	2013 Calculated Ldn Level	2035 Calculated Ldn Level	Impact Assessment
Atlantic Avenue at East Street	64.5 dBA	64.0 dBA	No Impact
Atlantic Avenue at Kneeland Street	69.8 dBA	70.5 dBA	No Impact
Across Fort Point Channel at Necco Street	56.7 dBA	58.6 dBA	Moderate Impact

Because of the slow speed of the trains entering and leaving South Station, train vibration levels are not expected to exceed the FTA criterion of 72 VdB for human annoyance. The vibration levels would be perceptible along the platforms when standing next to the locomotives, however.

[11] Noise-sensitive receptors primarily include residences and buildings where people normally sleep, such as hospitals and hotels. Other noise-sensitive receptors include schools, libraries, and office buildings where quiet is essential for a productive work environment. Most other commercial, retail, and industrial land uses are not considered to be noise-sensitive. This would include the South Station headhouse.

[12] Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report, Appendix 11, Noise and Vibration Technical Report. October 2014.* http://www.massdot.state.ma.us/Portals/25/docs/DEIR/appendix/11-Appendix11.pdf

Layover Facilities

There would be no noise impact from the train operations at the Widett Circle layover facility site; the nearest noise sensitive receptors located along Albany Street are approximately 1,300 feet from the acoustic center of the site. At the Readville – Yard 2 layover facility site, the midday peak activity hour Leq noise level of 65 dBA would exceed the FTA moderate impact criterion of 64 dBA at the nearby single-family residential receptors located along Wolcott Street and Wingate Road, and the apartment buildings along Riley Road and Sierra Road. Because of the slow speed of the trains entering and leaving the layover facilities, train vibration levels are not expected to exceed the FTA criterion of 72 VdB for human annoyance.

3.3.3. Mitigation Measures

South Station

The noise mitigation measures at South Station would consist of an 18-foot high, 1,450-foot long noise barrier that would reduce the noise levels from the train operations at South Station by 10-12 dBA in the Fort Point Historic District and along the Dorchester Avenue Harborwalk. Figure 3-2 shows the proposed location of the South Station noise barrier. The proposed headhouse between the new tracks and 245 Summer Street would provide a 10 dBA in noise reduction at this building.

Layover Facilities

There would be no noise impact from the train operations at the Widett Circle layover facility, and therefore no mitigation is required. At the Readville – Yard 2 layover facility, the existing berm/noise barrier would be extended to provide noise mitigation to the single-family homes along Wolcott Street and Wingate Road, and the apartment buildings on Riley Road and Sierra Road. This berm/noise barrier would be approximately 18 feet high and approximately 800 feet long. Figure 2-6 shows the proposed location of the extended berm/noise barrier. In addition, shore power would be supplied so that the locomotives can be plugged in to reduce the amount of engine idling time at the layover facility. Using electrical power at the layover facility rather than diesel-burning engines, greatly reduces air and noise pollution from trains. When trains use shore power, they tap layover facility electricity for their power needs at berth – lights, pumps, communications, refrigeration – instead of running diesel-fueled auxiliary on-board engines.

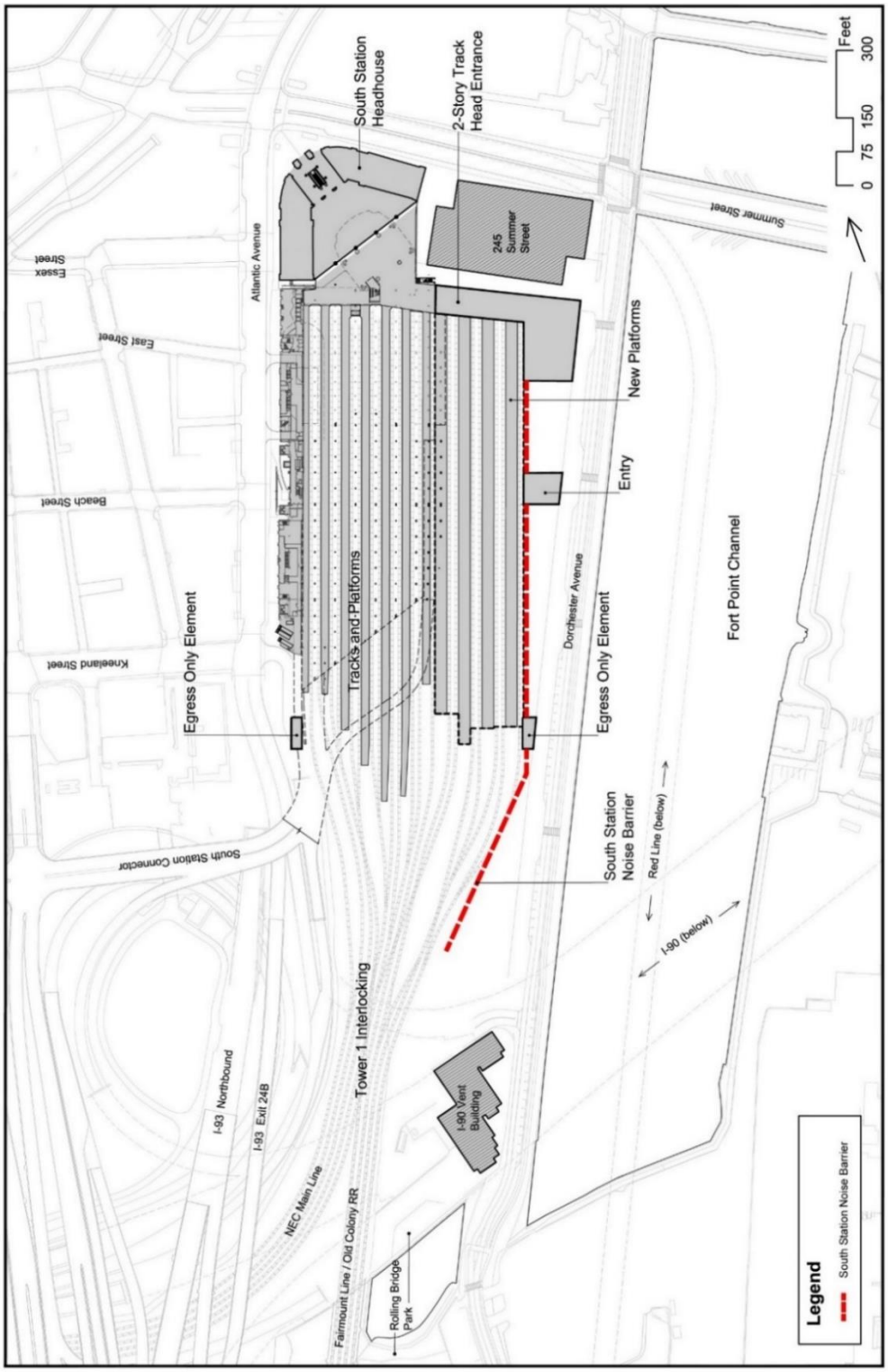

Figure 3-2 — South Station Proposed Noise Barrier

3.4. Water Resources and Water Quality

The Project Team evaluated water resources (including stormwater, potable water, and wastewater) and water quality in compliance with federal, state, and local regulations, such as the Massachusetts Stormwater Management Standards (310 Code of Massachusetts Regulations [CMR] 10.05), the Massachusetts Surface Water Quality Standards (314 CMR 4.00 et seq.), the Massachusetts Surface Water Quality Standards for Outstanding Resource Waters (ORWs) (314 CMR 4.04(3) and 314 CMR 4.05(3)), Areas of Critical Environmental Concern (ACECs) (301 CMR 12.00), and the National Wild and Scenic Rivers Act of 1968 (16 USC 1271 et seq.).

For the water resources and water quality analyses, the Project Team:

- Identified and characterized surface and groundwater resources in the vicinity of each project element with a discussion by location, watershed, and water quality;
- Identified stormwater and water quality-related permit requirements for construction of the Build Alternative;
- Described direct contributions to water resources and discussed any direct or indirect impacts to receiving waters for temporary (construction period) and proposed conditions;
- Identified mitigation strategies such as best management practices (BMPs) for short-term (construction) and long-term impacts;
- Provided a discussion of the project's compliance with regulations and regulatory performance standards for stormwater;
- Provided estimates of project-related water usage and wastewater generation, tabulated by use and project element;
- Confirmed availability of sufficient water supply for the project through consultations with BWSC;
- Identified the existing wastewater system to be used by the project elements, from the point of origin to the point of discharge;
- Reviewed federal, state, and local guidelines, permits, and directives regarding existing sanitary sewers, combined sewers, and Combined Sewer Overflows (CSOs) in the vicinity of the project elements;
- Coordinated with MWRA and BWSC regarding existing regulations and policies and project requirements;
- Identified water conservation measures to incorporate into the project elements; and
- Assessed the impacts of SSX project-related flows upon the existing BWSC wastewater system and identified mitigation measures.

3.4.1. Existing Conditions

South Station

The South Station study area is in the Boston Harbor watershed and contains one surface waterbody, Fort Point Channel, which is part of Boston Inner Harbor.

The Fort Point Channel drainage subbasin includes a large area of Boston. The subbasin consists of land uses that are largely residential with commercial and industrial land uses in the vicinity of the study area

and Fort Point Channel. This subbasin, according to BWSC, is a combined sewer and stormwater infrastructure drainage catchment area draining to Fort Point Channel and includes the entire area draining to Fort Point Channel. No other open water features exist within the subbasin and all stormwater is assumed to be conveyed in closed drainage systems.

Fort Point Channel is part of the Boston Inner Harbor waterbody (ID MA70-02). Boston Inner Harbor is included on the *Massachusetts Year 2014 Integrated List of Waters* as Category 5. Category 5 waters are defined as waters identified as impaired (i.e., not supporting one or more intended uses) where the impairment is related to the presence of one or more "pollutants," and the source of those pollutants is not considered to be natural and requiring one or more Total Maximum Daily Load (TMDL). The *Massachusetts Year 2014 Integrated List of Waters* lists Boston Inner Harbor as being impaired for polychlorinated biphenyls (PCBs) in fish tissue, fecal coliform, *Enterococcus*, dissolved oxygen, and other pollutants. A Draft Pathogen TMDL has been developed for Boston Harbor in its entirety, which includes Boston Inner Harbor.

The South Station site consists mostly of impervious surfaces (highly impenetrable by water) including roadways, sidewalks, and rooftops (including rooftop parking). At the train track area, although ballasted (a crushed stone trackbed), it is assumed to be impervious due to the underlying compact soils. There are only minor, incidental pervious areas (highly penetrable by water) that exist, except for Rolling Bridge Park. Stormwater from the study area is collected in closed drainage systems and either routed offsite to Atlantic Avenue or to outlets to Fort Point Channel. There is no evidence of stormwater detention, infiltration, or treatment measures in place at the site. Existing pollutants and pollutant sources to Fort Point Channel include cars, trucks, trains, aerial (atmospheric) deposition, hydrocarbons, metals, pathogens, total suspended solids (TSS), herbicides, trash, chloride, and nutrients. Ten stormwater outfalls from the South Station site discharge to the Fort Point Channel. Three active CSOs are also in the immediate vicinity of the South Station site. Soil borings show groundwater elevations varying in depth from 2.8 feet to 17 feet below the surface.

There is an extensive BWSC water distribution system along Atlantic Avenue, and to a lesser extent, along Dorchester Avenue at the South Station site. Wastewater collection at the South Station site is provided through a series of BWSC sanitary sewer mains, combined sewer mains, and CSOs. Table 3-5 summarizes existing wastewater generation and water usage volumes at the South Station site, which includes the South Station Rail Terminal, Bus Terminal, retail and office space, and the USPS facility.

Layover Facilities

The Widett Circle layover facility study area is located in the Boston Harbor watershed; however, there are no surface waters located in the Widett Circle site boundary. No stormwater detention, infiltration, or treatment measures are in place at Widett Circle. Stormwater from Widett Circle site is collected in a series of catch basins and overflows ultimately discharge from the combined sewer to Fort Point Channel. BWSC water mains, sewers, and combined sewers are located within the Widett Circle site.[13] The existing facilities on the site each have water services to serve their industrial and domestic uses. Table 3-5 provides existing wastewater generation and water usage at the proposed Widett Circle layover facility site.

Drainage from the Readville – Yard 2 site primarily discharges to the Neponset River (Waterbody ID 73-02), an impaired Category 5 waterbody, which runs south to north just east of the site. The *Massachusetts Year 2014 Integrated List of Waters* lists impairments for Segment 73-02 of debris/floatables/trash, Dichloro-diphenyl-trichloroethane (DDT), *Escherichia coli*, fecal coliform, foram/flocs/scum/oil slicks, other, oxygen-dissolved, PCB in fish tissues, and turbidity. A TMDL of

[13] BWSC utility mapping obtained from BWSC in April 2010.

bacteria for the Neponset River has been developed. Drip pans are positioned to collect any incidental drips from trains, which mix with stormwater and pass through oil/water separators before discharging to a sanitary sewer system. Besides the oil/water separators, no stormwater detention, infiltration, or treatment measures are in place at the Readville – Yard 2 site. Water service is provided to existing facilities via a BWSC water main.[14] BWSC separated sewers are located in the areas surrounding the site. Existing buildings on site discharge their wastewater to the BWSC system. Table 3-5 summarizes estimated wastewater generation and existing water usage rates at the Readville – Yard 2 layover facility site.

Table 3-5 — Estimated Existing and Proposed Water Usage and Wastewater Generation

Location	Existing Water Usage (gpd)	Proposed Water Usage (gpd)	Existing Wastewater Generation (gpd)	Proposed Wastewater Generation (gpd)	% Change
South Station	372,900	538,461	339,000	489,510	44%
Widett Circle	14,460	6,440	13,140	5,850	-55%
Readville – Yard 2	2,150	3,870	1,950	3,510	80%

gpd = gallons per day

3.4.2. Environmental Consequences

No Build Alternative

At South Station, the No Build Alternative would not result in any improvements to the stormwater collection system and would not reduce the overall amount of impervious area at the project site. Stormwater would continue to runoff into the Fort Point Channel. The closed drainage system would continue to contribute peak flow volumes to the CSOs and to the Boston Inner Harbor watershed. Pollutant and TSS loads to the watershed would not decrease. The No Build Alternative would not result in any improvements to peak flow rates, runoff volumes, or water quality at Widett Circle or Readville – Yard 2. Tables 3-6, 3-7, and 3-8 summarize the peak flow and volume calculations for the existing conditions and the No Build Alternative.

Build Alternative

As a result of the project, the South Station and Widett Circle sites would decrease in impervious coverage, while Readville – Yard 2 would increase in impervious coverage due to 2.0 acres of new pavement. Ballast cover would increase in all three locations.

South Station

At the South Station site, the Build Alternative would result in a 6.8-acre decrease in impervious land cover due to the removal of the existing USPS facility and its replacement with an expanded railroad yard, and the addition of landscaped areas on Dorchester Avenue. While both a railroad yard and buildings are considered to be impervious surfaces, railroad yards have some degree of permeability. It would increase the amount of water volume storage, thereby decreasing peak flow volumes to the closed drainage system and increasing the amount ground water recharge that took place. Recharge of stormwater would be provided through the installation of BMPs including a bioretention area in the vicinity of the station. These BMPs would provide approximately 80% TSS removal from stormwater runoff from all impervious surfaces on the project site and also decrease TSS and pollutant loads being added to the Fort Point Channel. It would also decrease the overall amount flow added to the existing CSOs.

[14] BWSC utility mapping obtained from BWSC in April 2010.

Therefore, the peak flows and peak runoff volumes in the post-development condition would be less than the pre-development condition, resulting in an improvement to existing conditions and thereby complying with the MassDEP Stormwater Regulations, and Massachusetts Clean Waters Act. Table 3-6 summarizes the peak flow and volume calculations for the South Station project site.

Table 3-6 — South Station Peak Flow Rates and Runoff Volumes

Storm Event	24-Hour Rainfall Depth (in)	Existing & No Build Condition Peak Flow (ft^3/sec)	Existing Runoff Volume (ft^3)	Proposed Peak Flow (ft^3/sec)	Proposed Runoff Volume (ft^3)
2-yr	3.3	165	463,000	156	428,000
10-yr	4.9	233	749,000	227	710,000
50-yr	7.4	327	1,189,000	322	1,147,000
100-yr	8.8	377	1,444,000	373	1,401,000

As shown in Table 3-5, water usage at the South Station site would increase from existing conditions, and wastewater generation would increase from existing conditions. At South Station, this increase in generation would be due to the increase in commuters moving the station on a daily basis as well as the increased capacity in retail and station square footage. Since the wastewater discharge would exceed MassDEP's 15,000 gpd compliance threshold for the South Station project site, infiltration/inflow (I/I) offsets would be incorporated into the final design.

Layover Facilities

At the Widett Circle site, the project would result in a reduction in peak flow rates and runoff volume to less than existing conditions due to a 14.7-acre decrease in impervious surfaces (Table 3-7). In addition to the BMPs discussed below, the currently paved area will be replaced by ballast, which is a crushed stone trackbed with characteristics of both pervious and impervious surfaces. At the Readville – Yard 2 site, the project would result in an increase in the proposed peak flow and runoff volumes, prior to mitigation, due to the 2.0-acre increase in impervious cover. Table 3-8 summarizes the peak flow and volume calculations.

Table 3-7 — Widett Circle Peak Flow Rates and Runoff Volumes

Storm Event	24-Hour Rainfall Depth(in)	Existing & No Build Condition Peak Flow (ft^3/sec)	Existing Runoff Volume (ft^3)	Proposed Peak Flow (ft^3/sec)	Proposed Runoff Volume (ft^3)
2-yr	3.3	73.8	319,000	65.3	263,400
10-yr	4.9	104.5	497,500	97.9	436,700
50-yr	7.4	147.4	770,400	142.5	705,700
100-yr	8.8	171.4	927,700	167.2	861,700

Table 3-8 — Readville – Yard 2 Peak Flow Rates and Runoff Volumes

Storm Event	24-Hour Rainfall (in)	Existing & No Build Condition Peak Flow (ft^3)	Existing Runoff Volume (ft^3)	Proposed Peak Flow (ft^3/sec)	Proposed Runoff Volume (ft^3)
2-yr	3.3	35.5	141,100	36.7	146,800
10-yr	4.9	54.6	239,700	55.7	246,400
50-yr	7.4	81.0	394,200	81.8	401,600
100-yr	8.8	95.4	484,200	96.2	491,800

As shown in Table 3-5, water usage at the Readville – Yard 2 site would increase from existing conditions, and wastewater generation would increase from existing conditions. At Readville – Yard 2 water and wastewater increases are expected because of the increase in building area, and expected increase in occupants. Water usage at the Widett Circle layover facility would decrease from existing conditions; and wastewater generation would decrease from existing conditions. The water and wastewater reduction is expected at the Widett Circle layover facility because of the demolition of the existing buildings, change in use, and overall reduction in building area. The layover facility sites would require domestic sewer for the crew building and support shed proposed at each site.

Only light maintenance activities (e.g., cleaning the interior of coaches, minor running repairs) are proposed at the project sites, therefore no industrial wastewater would be generated that would require a U.S. EPA Industrial Permit. According to BWSC, its existing system has adequate capacity to handle the proposed water demand and wastewater discharge. Capacity would be further evaluated as project design advances.

3.4.3. Mitigation Measures

In order to minimize impacts, both structural and nonstructural stormwater BMPs would be installed, as necessary, to mitigate the changes in stormwater runoff volumes and peak rates, and to limit the impact from construction and operation on nearby waterbodies, including maintenance of the Total Maximum Daily Loads (TMDLs) of the Neponset River. They would be implemented in compliance with MassDOT and City of Boston Complete Streets guidelines and MassDEP stormwater management criteria and federal guidelines. Structural BMPs may include pervious pavers with underdrains for the sidewalks and the Harborwalk, vegetated open spaces, bioretention areas and/or tree box filters. Nonstructural BMPs at South Station would include reducing impervious ground cover, potentially disconnecting roof drains from the station to the closed drainage system, snow removal, and street sweeping along Dorchester Avenue.

MassDOT would incorporate water efficiency measures to minimize the use of water and wastewater generation. As project design advances, and in consultation with MassDEP and BWSC, MassDOT would develop an I/I Plan to mitigate for increased wastewater flows at the South Station site.[15, 16]

Depending upon the construction staging and location of service connections within the new buildings, replacing the existing sewer main could be required within Dorchester Avenue. MassDOT would develop Post Construction Stormwater Operation and Maintenance (O&M) Plans for South Station and the two layover sites during the final design. The City of Boston would develop the Post Construction Stormwater O&M Plan for Dorchester Avenue.

3.5. Wetlands

The federal, state, and local regulations applicable to wetlands at the project sites include: Sections 401 and 404 of the Clean Water Act (33 U.S.C. 1341 and 1344); Massachusetts Wetlands Protection Act, Massachusetts General Law [M.G.L.] c. 131, Section 40 and its implementing regulations; and Massachusetts Clean Water Act, [M.G.L.] c. 21, Sections 26-53.

[15] Massachusetts Department of Environmental Protection. *BRP 09-01: Policy on Managing Infiltration and Inflow in MWRA Community Sewer Systems*. September 24, 2010.

[16] Inflow is stormwater that enters the wastewater system through rain leaders, basement sump pumps, or foundation drains illegally connected directly to a sanitary sewer pipe, while infiltration is groundwater that seeps into sewer pipes through cracks, leaky pipe joints, and/or deteriorated manholes.

For the wetlands analysis, the Project Team:

- Determined federal jurisdictional areas in tidal/navigable waters;
- Identified and assessed wetlands located within approximately one half-mile of South Station and the layover facility sites, using existing Massachusetts Office of Geographic Information (MassGIS) data sets;
- Delineated and characterized SSX project area wetland resources, including wetland resource buffer zones, using combinations of data collection literature search and field delineation;
- Identified federal waterways and Massachusetts Wetlands Protection Act permitting requirements associated with the SSX project;
- Identified potential adverse impacts to the environment in the SSX project areas;
- Identified general mitigation strategies, such as avoidance and minimization; and
- Described the consistency of the SSX project design and construction with the performance standards established in the Massachusetts Wetlands Protection Act.

3.5.1. Existing Conditions

South Station

The South Station project footprint has limited vegetation and mainly impervious surfaces. Fort Point Channel, a navigable tidal water of the U.S., is identified as an Estuarine and Marine Deepwater Habitat according to the United States Fish and Wildlife Service (U.S. FWS) Wetlands and Deepwater Habitat Classification System.[17] The Fort Point Channel high tide line elevation, the limit of jurisdictional waters of the U.S., was determined to be 6.79 feet (North American Vertical Datum of 1988 or NAVD 88)[18] and is confined to the seawall along Dorchester Avenue.

There are no vegetated wetlands located in the study area or site boundary. The U.S. FWS National Wetland Inventory indicates that there is a small estuarine wetland at the southern end of Fort Point Channel, located approximately 250 feet west of the southern portion of the South Station site boundary. A site visit determined that an estuarine wetland does not exist at this location. Fort Point Channel, adjacent to the project site, is regulated as Land Under the Ocean under the Massachusetts Wetlands Protection Act (WPA). Massachusetts WPA jurisdictional resources within the South Station project footprint include coastal bank, 100-foot jurisdictional buffer to coastal bank, and land subject to coastal storm flowage (LSCSF), which is defined as the 100-year coastal floodplain (see Figure 3-3).

[17] Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. "Classification of Wetlands and Deepwater Habitats of the United States." (FWS/OBS-79/31, 131 pp) December 1979. Accessed October 2012. http://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States.pdf.

[18] National Oceanic and Atmospheric Administration, National Ocean Service, Elevations of Station Datum, Boston MA April 2003. Accessed January 2016. https://tidesandcurrents.noaa.gov/datums.html?id=8443970.

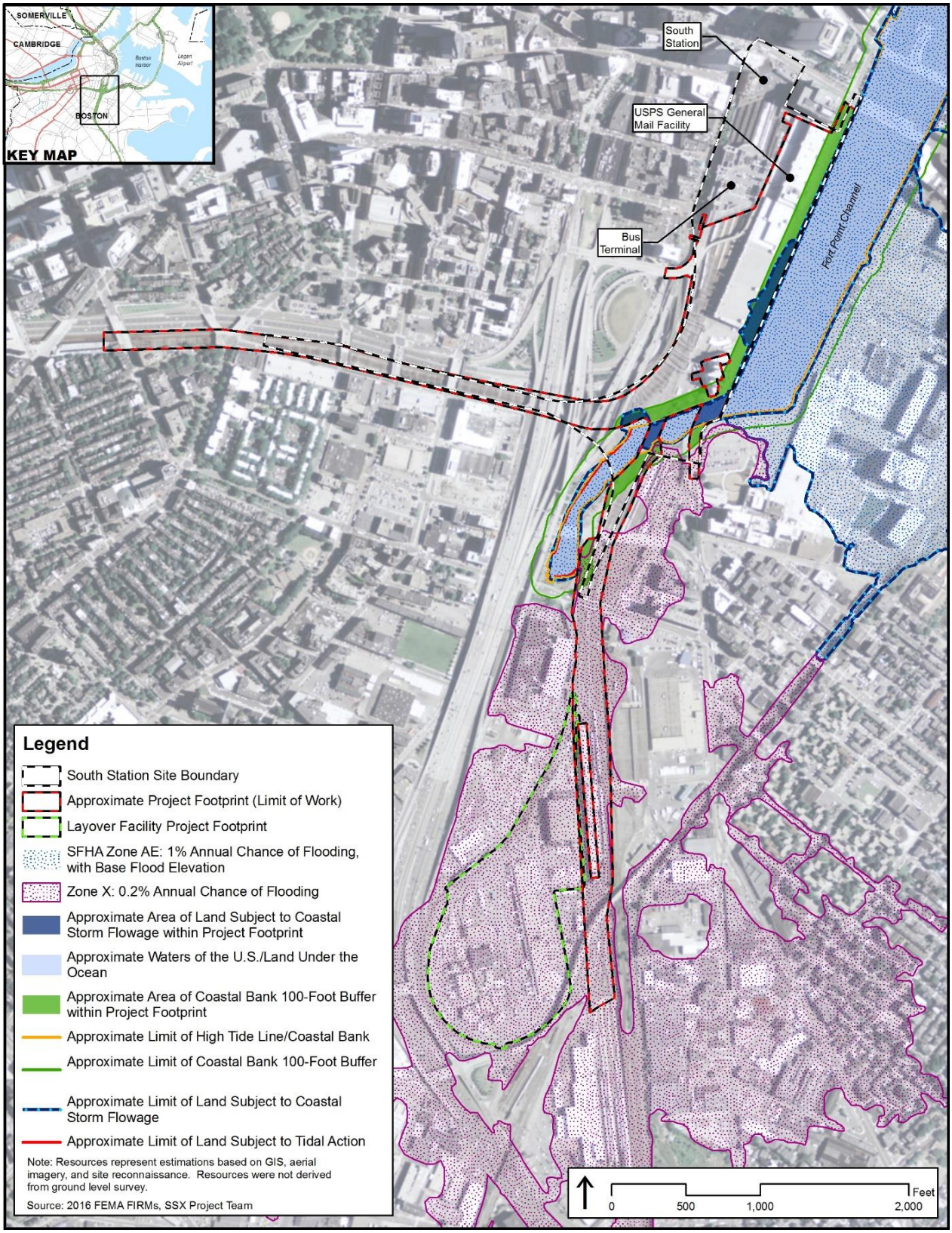

Figure 3-3 — Wetlands Resources – South Station and Widett Circle Layover Facility

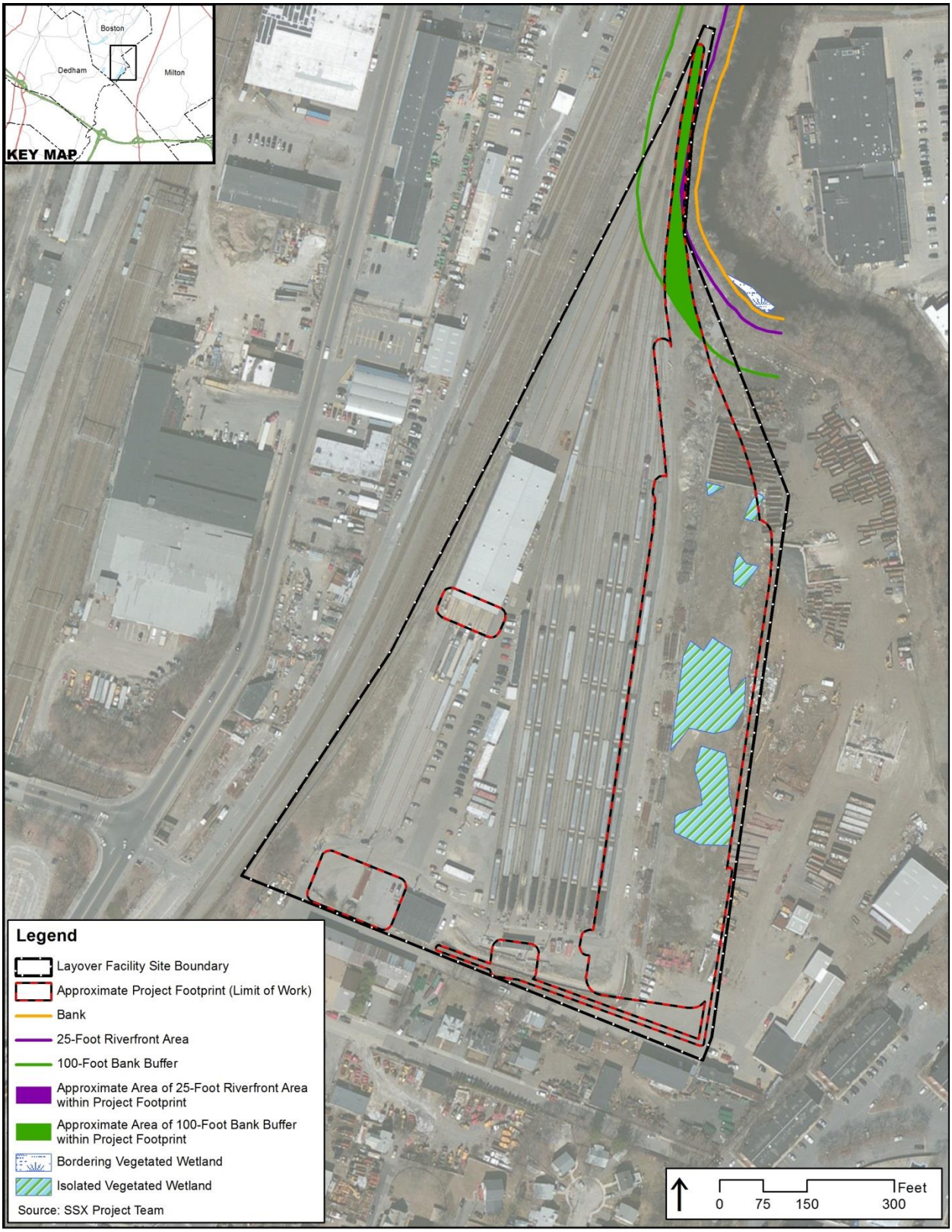

Figure 3-4 — Wetlands Resources – Readville – Yard 2 Layover Facility

Layover Facilities

The Widett Circle layover facility study area is located in the Boston Harbor watershed; however, there are no surface waters or natural wetlands located in the Widett Circle site boundary.

The Readville – Yard 2 site includes areas used as a rail yard by the MBTA, undeveloped property also owned by the MBTA, and an area used for metal recycling owned by an adjacent abutter. The project footprint consists of predominantly existing rail infrastructure, disturbed ground, sparsely vegetated grass, and shrub patches among actively used areas for materials storage and the disturbed edge of the wooded riparian buffer to the Neponset River. The northern portion of the site is within the 200-foot jurisdictional riverfront area to the Neponset River. This area is not floodplain, does not contain any extensive natural or vegetated areas, and partially occupies areas experiencing regular disturbance. As shown in Figure 3-4, the site contains five vegetated wetlands that are potentially federal jurisdictionally isolated, highly and regularly disturbed, include invasive species, are not indicative of natural wetlands, and are likely to have developed as a result of former and on-going land use operations. These wetlands do not appear to meet the U.S. ACE criteria of waters of the U.S.; however, they fall within 4,000 feet of the ordinary high water mark of the Neponset River, and could meet the criteria of needing a site specific evaluation of significant nexus on waters of the U.S. Both the onsite evaluation and digital hydrologic volume estimations of these five isolated vegetated wetland areas confirmed that they are not jurisdictional under the Massachusetts WPA as isolated land subject to flooding, and will not require WPA regulation at the state or local level. In addition, a small vegetated wetland was delineated along the Neponset River, outside of the site boundary.

3.5.2. Environmental Consequences

No Build Alternative

Under the No Build Alternative, improvements would not be made to South Station and the two layover facilities. As a result, no impacts to wetlands would occur.

Build Alternative

South Station

No wetlands would be impacted as a result of the work performed within the project footprint of South Station. At the South Station site, resource impacts would include approximately 2.9 acres of LSCSF and approximately 700 linear feet (lf) of coastal bank due to raising a depressed section of the seawall along Dorchester Avenue by 1.5 feet to match the elevation of the wall to the north and south. Approximately 7.9 acres of 100-foot buffer zone to coastal bank would also be impacted as a result of the Build Alternative.

Layover Facilities

There are no wetlands in the project footprint or surrounding vicinity of Widett Circle, and no WPA jurisdictional resources would be affected within the Widett Circle project footprint.

At the Readville – Yard 2 site, resource impacts would include approximately 0.01 acres of riverfront area, and approximately 0.6 acres of WPA isolated vegetated wetlands. The impact will fill the five isolated vegetated wetlands. Approximately 0.3 acres of 100-foot buffer zone associated with the Neponset River bank would also be impacted. MassDOT will consult with the U.S. ACE as design advances in order to determine whether the five isolated vegetated wetlands fall under the jurisdiction of Section 404 of the Clean Water Act.

3.5.3. Mitigation Measures

South Station

In accordance with the WPA, construction at South Station would need to be preceded by a Notice of Intent (NOI) and Orders of Condition(s) per the requirements of 310 CMR 10.00. In the project NOI,[19] demonstration of consistency with WPA performance standards would be required. Given the proposed project footprint and anticipated resource impacts, construction activities at the South Station site would meet the performance standards of the WPA. No mitigation would be required by WPA regulations.

Layover Facilities

No mitigation related to wetlands would be required or proposed at the Widett Circle layover facility site.

In accordance with the WPA, construction at Readville – Yard 2 would need to be preceded by a NOI and Orders of Condition(s) per the requirements of 310 CMR 10.00. In the project NOI, demonstration of consistency with WPA performance standards would be required. The determination by the U.S. ACE would establish whether a 404 permit from the U.S. ACE and a Section 401 water quality certification are needed from MassDEP for impacts to the five isolated vegetated wetlands. If deemed jurisdictional, mitigation for impacts to these disturbed wetland areas would be determined through consultation with the U.S. ACE. In the event that a Section 404 permit and a Section 401 water quality certification is required, MassDOT will take the appropriate steps to file the applications and to meet the prescribed performance standards.

3.6. Floodplains and Sea Level Rise

The federal, state, and local regulations and guidance documents applicable to floodplains and sea level rise (SLR) at the project sites include: Executive Order 11988: Floodplain Management; Executive Order 13690: The Federal Flood Risk Management Standard; U.S. DOT Order 5650.2, Floodplain Management; Massachusetts Executive Order No. 149: Federal Emergency Management Agency (FEMA) and Flood Plain Use**;** Massachusetts Wetlands Protection Act, M.G.L. c. 131, Section 40, and its implementing regulations, 301 CMR 10; FTA, *Flooded Bus Barns and Buckled Rails: Public Transportation and Climate Change Adaptation*, August 2011; EEA and the Adaptation Advisory Committee, *Massachusetts Climate Change Adaptation Report*, 2011; The Boston Harbor Association's *Preparing for the Rising Tide*; and publications issued by U.S. EPA and National Oceanic and Atmospheric Administration (NOAA) related to climate change and Sea Level Rise (SLR).

For the floodplains analysis, the Project Team:

- Identified and characterized areas of 100-year and 500-year floodplain, floodway, and coastal flood hazard zones within the project area/setting;
- Addressed potential impacts to floodplains and floodways; and
- Compared the results of the Boston Harbor Flood Risk Model (BH-FRM) with FEMA data.

[19] One or more Notices of Intent could be required for the SSX project depending upon construction staging and requirements of the Commission.

3.6.1. Existing Conditions

South Station

Fort Point Channel and some of the surrounding areas contain both 1% annual chance (100-year; zone AE) and 0.2% annual chance (500-year; zone X) floodplains.[20, 21] No V zones (coastal flood zone with velocity hazard [wave action]; no base flood elevation determined) are present. Zone AE, a type of special flood hazard area (SFHA), is the flood insurance rate zone that corresponds to the 100-year floodplain. The base flood elevation (BFE) for Zone AE in Fort Point Channel is 10 feet NAVD 88.[22] The extent of the SFHA, shown in Figure 3-3, includes a portion of the site along Dorchester Avenue between the USPS and the Fort Point Channel, and a portion of the area between the tracks as they split into the NEC Main Line headed west and the Fairmount/Old Colony Railroad lines headed south. The seawall is not at a consistent elevation throughout the site, however, and locations where the 100-year coastal flood zone encroaches into the site correspond to the lower areas of seawall. Zone X areas occur in the southern part of the study area, extending beyond I-90 and Foundry Street, completely covering the Widett Circle site boundary.

MassDOT, partnering with the FHWA, released updated information on Boston's vulnerability to different flooding scenarios using the BH-FRM.[23] The model was used to show the 1% coastal flood exceedance probability (CFEP) for the area around South Station and Widett Circle, as well as flooding depths for 1% coastal flood exceedance probability scenarios in these locations. A 3.2-foot rise in sea level would cause inundation over much of the South Station project footprint, as well as much of the areas surrounding South Station, during the 1% annual chance flood event. By 2070, portions of the South Station platform areas could flood to a depth of between 0.5 feet and 1.5 feet under the conditions of a 3.2-foot rise in sea levels. The portion of the South Station project footprint including tracks extending both west away from South Station and south towards Widett Circle could flood to depths of up to 3.0 feet.

Layover Facilities

The current SFHA does not encroach on the Widett Circle project footprint. However, areas of Zone X extend south of the Zone AE boundary in Fort Point Channel to completely cover the Widett Circle site and much of the area immediately to the south. Based on existing elevations throughout Widett Circle, there could be added risks of flooding through unknown underground connections, such as storm drainage pipes, which could inundate the site during a 100-year flood.

According to the BH-FRM, Widett Circle would not be impacted by the 1% CFEP event until approximately 2070, at which point it could experience flooding at depths of between 1.5 and 2.0 feet.

Within the Readville – Yard 2 layover facility vicinity, the Zone AE flood hazard areas do not encroach on the project site.

[20] Federal Emergency Management Agency. *Flood Insurance Study, Suffolk County Massachusetts.* Revised March 16, 2016.

[21] Federal Emergency Management Agency. *Flood Insurance Rate Maps for Suffolk County Massachusetts*. Revised March 16, 2016.

[22] The North American Vertical Datum of 1988 (NAVD 88) is the vertical control datum of orthometric height established for vertical control surveying in the United States of America based upon the General Adjustment of the North American Datum of 1988.

[23] MassDOT-FHWA. *Pilot Project Report: Climate Change and Extreme Weather Vulnerability Assessments and Adaptation Options for the Central Artery.* June 2015.

3.6.2. Environmental Consequences

No Build Alternative

Flood events will continue to occur within the project area due to SLR and changes in storm patterns caused by climate change. Under the No Build Alternative, improvements would not be made to the South Station site and two layover facilities. As a result, the existing depressed seawall would present further risk for flooding at South Station during 1% annual chance flood events.

Build Alternative

South Station

The project would include construction and development in areas of both the 100-year and 500-year floodplain within the South Station site boundary. The area of 100-year floodplain within the project footprint affected by the project would be approximately 2.9 acres, and impacts to the 500-year floodplain would total approximately 13.2 acres. The potential impacts to the 500-year floodplain would occur along the rail corridor south of South Station and adjacent to the Widett Circle site. All areas of floodplain occurring at the site are currently developed land; therefore, project activities at the South Station site would not convert natural ground habitat floodplains into floodplain representative of developed land. Impacts to floodplains at the South Station site would include redevelopment of existing developed areas.

Layover Facilities

The proposed project would not include construction or development in any areas of the 100-year floodplain at Widett Circle or Readville – Yard 2. The project would affect approximately 29.7 acres of the 500-year floodplain within the Widett Circle site boundary.

3.6.3. Mitigation Measures

South Station

No significant impacts to floodplains are anticipated as a result of the SSX project. Therefore, no mitigation of project-related impacts is required. However, in an effort to minimize South Station's vulnerability to potential future flooding events, MassDOT proposes to raise an approximate 700-foot depressed section of seawall bordering the Fort Point Channel and the adjacent portion of Dorchester Avenue by approximately 1.5 feet to make it consistent with the height of the adjacent seawall. Elevating both the seawall and Dorchester Avenue in this manner could reduce the area of 100-year floodplain reaching the South Station site boundary significantly for the near term.

MassDOT will consider additional adaptation measures to minimize South Station's vulnerability to potential future flooding events. Measures may include elevating power/heating, ventilation and air conditioning (HVAC) sources; relocating critical systems to higher levels; designing infrastructure and critical equipment to accommodate seawater flooding; water-proofing subsurface site elements; and using corrosion protection elements and materials for underground structures.

SLR could affect three CSO outlets to Fort Point Channel. Additional adaptation measures may be necessary to minimize seawater entering back into the combined sewer lines. BWSC has plans to modify CSO and storm drain outfall operations. MassDOT will coordinate with BWSC and comply with all related BWSC requirements.

Layover Facilities

No mitigation related to floodplains would be required or proposed at the layover facility sites.

3.7. Waterways and Coastal Zone Management

The following state and federal statutes and regulations establish jurisdiction over the SSX project because of its location on land created by the placement of fill within former tidal waters of Boston Harbor, and within the Massachusetts Coastal Zone: M.G.L. Chapter 91, as amended and its implementing regulations, the Massachusetts Waterways Regulations, 310 CMR 9.00; U.S. Coastal Zone Management Act of 1972, 16 U.S.C. 1451-1464, Chapter 33, Public Law (PL) 92-583, October 27, 1972, as amended; MEPA regulations, 301 CMR 11.00; M.G.L. Chapter 21A, sections 2, 4A and the Massachusetts Coastal Zone Management Regulations, 301 CMR 21.00 (Federal Consistency Review); 2007 Massachusetts Acts (Chapter 168) and the Massachusetts Public Benefit Regulations, 301 CMR 13.00; and Massachusetts Municipal Harbor Plan Regulations, 301 CMR 23.00.

The methodology that was used to determine the geographic extent of CZM and Chapter 91 jurisdiction at the South Station and layover facility sites was developed in consultation with MassDEP, in accordance with the Waterways regulations, 310 CMR 9.00, and as recommended by the Secretary of EEA in the Certificate on the ENF[24]. It included:

- A review of readily available historic maps, charts, surveys, and selected acts and resolves of the Massachusetts General Court pertaining to the filling and development of the project sites and Fort Point Channel;
- Preparation of MassGIS-based draft Chapter 91/CZM jurisdictional plans;
- Identification of proposed activities within filled and landlocked tidelands subject to licensing under Chapter 91 under 310 CMR 9.00 and/or Public Benefit Review under 301 CMR 13.00;
- Identification of potential impacts to the public rights in tidelands, along with potential measures to avoid, minimize or mitigate those impacts; and
- Documentation of the project's compliance with the regulations applicable to each project element.

3.7.1. Existing Conditions

The methodology used to determine the geographic extent of Chapter 91 and CZM jurisdiction at the South Station and layover facility sites was developed in consultation with MassDEP, in accordance with the Waterways regulations, 310 CMR 9.00, and as recommended by the Secretary of EEA in the Certificate on the ENF issued April 19, 2013. Table 3-9 identifies the coastal regulatory jurisdiction applicable to South Station and the layover facility sites.

[24] South Station Expansion Project, Environmental Notification Form, Secretary of Energy and Environmental Affairs Certificate. April 9, 2013. Available at: https://www.massdot.state.ma.us/southstationexpansion/Documents.aspx

Table 3-9 — Coastal Jurisdiction of SSX Project Sites

Project Element	CZM Federal Consistency Review	Chapter 91 Licensing	Public Benefit Determination
South Station	Yes	Yes[a]	Yes[b]
Widett Circle	Yes	N/A	Yes[b]
Readville – Yard 2	N/A	N/A	N/A

a Construction on filled tidelands located within 250 feet of the high water mark of flowed tidelands (i.e. Fort Point Channel) are subject to Chapter 91.
b Filled tidelands located greater than 250 feet from the high water mark of flowed tidelands are "landlocked" and not subject to Chapter 91. Construction on landlocked tidelands requires a Public Benefit Determination.

South Station

The South Station site occupies approximately 49 acres located adjacent to Fort Point Channel and is within the Massachusetts Coastal Zone. The historic shoreline in the Fort Point Channel area has been reviewed in detail by the Massachusetts EEA's *Massachusetts Chapter 91 Mapping Project*,[25] which identifies a portion of the South Station site as being seaward of Boston's original shoreline and including filled tidelands. Nearly all filled tidelands within the South Station site are held by the Commonwealth or a quasi-public agency or authority for the benefit of the public and therefore meet the regulatory definition of Commonwealth Tidelands.[26]

Layover Facilities

Widett Circle contains a small area of filled landlocked tidelands and is not subject to Chapter 91 licensing pursuant to Chapter 368 of the Acts of 2007 and 310 CMR 9.00. Pursuant to this statute, the construction of a layover facility at this site would require a Public Benefit Determination. Widett Circle is located in the Massachusetts Coastal Zone. The Readville – Yard 2 site does not contain any filled tidelands subject to the licensing requirements of Chapter 91, nor is it located in the Massachusetts Coastal Zone.

3.7.2. Environmental Consequences

No Build Alternative

The No Build Alternative would maintain the existing conditions relative to compliance with M.G.L. Chapter 91 and the Massachusetts Waterways Regulations, and would not require any new Chapter 91 licensing or approvals. No SSX project construction activities would occur within the Massachusetts Coastal Zone.

Build Alternative

The Build Alternative would fully comply with M.G.L. Chapter 91, the Massachusetts Waterways Regulations, and the Massachusetts CZM regulations. It would require a new nonwater-dependent infrastructure license for all transportation improvements related to (a) demolition of the existing USPS GMF (b) the track improvements and related construction within 250 feet of the flowed tidelands of Fort Point Channel, and (c) reopening approximately one-half-mile of Dorchester Avenue and its rededication to publicly accessible uses. The project also must comply with the Public Benefit Determination

[25] Massachusetts Executive Office of Environmental Affairs, Office of Coastal Zone Management. *Massachusetts Chapter 91 Mapping Project.* 2006.

[26] 310 CMR 9.02 defines Commonwealth Tidelands as "tidelands held by the Commonwealth, or by its political subdivisions or a quasi-public agency or authority, in trust for the benefit of the public; or tidelands held by a private person by license or grant of the Commonwealth subject to an express or implied condition subsequent that it be used for a public purpose," and notes that "the Department shall presume that tidelands are Commonwealth tidelands if they lie seaward of the historic low water mark or of a line running 100 rods (1650 feet) seaward of the historic high water mark, whichever is farther landward.

(301 CMR 13.00) criteria established for nonwater-dependent projects located completely or partially within filled tidelands or landlocked tidelands. There are no Chapter 91 jurisdictional filled tidelands at the layover facility sites and therefore no licensing actions are required at those sites.

The regulations require the proponent to demonstrate and the Massachusetts Office of Coastal Zone Management Program to certify that projects subject to such review are consistent with the regulatory policies and management principles listed in 301 CMR 21.98. If a U.S. ACE Section 404 Permit is required, a formal CZM consistency determination will be sought. Table 3-10 lists the CZM policies, which are applicable to the SSX project at the South Station and Widett Circle sites, and assesses the consistency of the SSX project with those applicable policies.

3.7.3. Mitigation Measures

No mitigation related to waterways or coastal zone management would be required or proposed at the South Station or layover facility sites.

Table 3-10 — Consistency of SSX Project with Applicable Massachusetts Coastal Zone Management Policies

CZM Policy	Summary of Policy	Summary of Consistency Statement
Water Quality Policy #1	Ensure that point-source discharges do not comprise water quality standards.	Project does not propose new untreated point-source discharges; systems would comply with stormwater regulations.
Water Quality Policy # 2	Implement nonpoint pollution controls.	Project would use BMPs to minimize non-point source pollution.
Habitat Policy # 1	Protect coastal, estuarine, and marine habitats to preserve wildlife habitats.	Project would obtain an Order of Conditions from Boston Conservation Commission for work in buffer zone of coastal bank.
Habitat Policy # 2	Advance the restoration of degraded or former habitats in coastal areas.	Project would comply with MassDEP and U.S. EPA requirements.
Protected Areas Policy # 3	Minimize adverse effect to historic properties and districts.	Project planning includes ongoing coordination with MHC.
Coastal Hazards Policy # 3	Ensure that state and federally funded public works projects would be safe from flood and erosion-related damage.	Project design would meet applicable regulations for work in coastal floodplain.
Ports Policy # 4	Preserve and enhance waterfront for vessel-related activities.	Project would provide open space along Fort Point Channel shoreline for water-dependent uses.
Public Access Policy # 1	Ensure that development would promote general public use and enjoyment of waterfront.	Project would create new recreational opportunities through restoration of five acres of filled tidelands, including extension of the Harborwalk, and a cycle track along Fort Point Channel waterfront.
Public Access Policy # 2	Improve public access to coastal recreational facilities; facilitate multiple uses; minimize adverse impacts of developments.	Project would improve rail capacity, enhance public access to coastal recreational facilities, and reduce automobile traffic and parking problems.
Public Access Policy # 3	Expand coastal recreational facilities and develop new public areas for recreational activities.	Project would provide extension of the Harborwalk and a cycle track along Fort Point Channel waterfront.
Energy Policy # 2	Encourage energy conservation and use of renewable sources.	Project would incorporate energy conservation measures and includes assessment of renewable energy potential.

CZM Policy	Summary of Policy	Summary of Consistency Statement
Growth Management Policy #1	Encourage sustainable development that is consistent with state, regional, and local plans.	Project would incorporate sustainable design elements, and is consistent with state, regional, and local plans.
Growth Management Policy #2	Ensure that state and federally funded infrastructure projects serve developed urban areas.	Project would improve public infrastructure to benefit the Boston metropolitan area.
Growth Management Policy #3	Encourage revitalization and enhancement of existing development in the coastal zone.	Project would revitalize neighborhoods and activate the site on a year-round basis.

3.8. Energy and Greenhouse Gas Emissions

The federal, state, and local regulations and guidance documents applicable to the use of energy and greenhouse gas (GHG) emissions at the project sites include:

- Council on Environmental Quality, *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews,* dated August 1, 2016 (the CEQ GHG Guidance);
- Sections of 42 U.S.C., which address energy conservation, decreased dependence on foreign oil, the use of alternative fuels, and increased efficiency in energy use;
- U.S. EPA Greenhouse Gas Emissions Standards for light-and heavy-duty vehicles in 2010 and 2011, respectively;
- The Massachusetts Clean Energy and Climate Plan for 2020 (January 19, 2016);
- Revised MEPA GHG Emissions Policy and Protocol, dated May 5, 2010;
- U.S. Green Building Council's *Leadership in Energy and Environmental Design* (LEED) rating system;
- Massachusetts State Building Code (780 CMR) and Stretch Code (780 CMR 120.AA);
- Boston Zoning Code, Article 37, *Green Buildings;* and
- City of Boston Environment Department Guidelines for High Performance Buildings and Sustainable Development.

A full air quality evaluation is provided in the DEIR Appendix 12, *Greenhouse Gas Emissions Technical Report*[27] with updated results in Section 3.13 of the FEIR[28].

Following the CEQ GHG Guidance, projected GHG emissions associated with proposed actions are used as a proxy for assessing proposed actions' potential effects on climate change. Per the NEPA GHG Guidance, agencies must consider the direct, indirect, and cumulative effects of the proposed action as well as both the context and intensity. For this analysis, direct effects are the emissions that result from on-site fuel usage. Indirect effects are the emissions that result from the generation of the electricity that the site uses. Cumulative effects are the total effects that result from the proposed action. In the case of South

[27] Additional information is provided in South Station Expansion Project. *Draft Environmental Impact Report*, *Appendix 10, Air Quality Technical Report*. October 2014. Available at: http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

[28] South Station Expansion. *Final Environmental Impact Report* June 2016. http://www.massdot.state.ma.us/southstationexpansion/Documents/FEIR.aspx

Station, the cumulative effects not only include direct and indirect emissions from the site but also the related carbon dioxide (CO_2) emission reductions from avoided automobile trips.

Per the CEQ Guidance, GHG emissions are quantified as CO_2 instead of carbon dioxide equivalent (CO_{2e}) because the CO_2 emissions are the majority of CO_{2e} emissions from combustion sources and the small amounts of methane (CH_4) and nitrous oxide (N_2O) that would be emitted would not have a significant impact on the results of the analysis.

3.8.1. Existing Conditions

Existing conditions at South Station include:

- Direct stationary source GHG emissions from building heat and other fuel usage at the existing South Station facility and the USPS facility;
- Indirect stationary source GHG emissions from electricity use at the existing South Station facility and the USPS facility;
- Direct transportation-related GHG emissions from fuel combustion associated with automobile trips, bus trips, and train trips associated with the existing South Station facility and the USPS facility; and
- Indirect transportation-related GHG emissions from electricity use associated with the existing Amtrak electric trains.

Similarly, existing conditions at the layover facilities include direct stationary source GHG emissions from on-site fuel use, indirect emissions associated with electricity use, and transportation-related GHG emissions associated with rail trips to and from the layover facilities.

3.8.2. Environmental Consequences

No Build Alternative

In the No Build Alternative, the layout of the overall South Station Terminal is unchanged. This means that the stationary source direct emissions are the same as in the existing conditions, and stationary source indirect emissions are based on the same electricity use as in the existing conditions (and changes in GHG emissions will be due to changes in the GHG emissions at the electric generating stations serving the electric distribution grid). The transportation sources evolve with time in the No Build Alternative. This evolution is consistent with the descriptions of public transportation ridership and roadways, and intersections in Section 3.10.2, and with changes in train, bus, and automobile fuel economy. Increasing number of trips increases GHG emissions, and improvements in fuel economy reduce GHG emissions.

Build Alternative

In the Build Alternative, direct and indirect stationary source emissions associated with the expanded South Station Terminal facilities would be added. The removal of the USPS facility would remove direct and indirect stationary source emissions from that facility (to be relocated elsewhere). Transportation-related GHG emissions would change from the No Build Alternative to the Build Alternative based on changes to the expected train and bus trips, and changes to the street traffic associated with roadway and intersection changes.

Table 3-11 presents net project-related CO_2 emissions calculated for SSX project-related transportation sources. The impacts associated with the Build Alternative are based on the net difference between the CO_2 emission rates of the No Build Alternative and the Build Alternative.

Table 3-11 — 2035 Project Related Net CO_2 Emission Increases at South Station (metric tpy)

Parameter	Net Build Alternative CO_2 Potential Emissions Increase (metric tpy)	Description of Change
Stationary Source Direct Emissions	144	Natural gas combustion at expanded South Station Terminal (removal of USPS facility not quantified)
Stationary Source Indirect Emissions	1,844	Electricity use at expanded South Station Terminal (removal of USPS facility not quantified)
Motor vehicles near South Station Direct Emissions	217	Automobile and truck fuel combustion in the South Station study area (consistent with Section 3.10.2)
Intercity buses near South Station Direct Emissions	31	Intercity bus fuel combustion in the South Station study area (consistent with Section 3.10.2)
Locomotives near South Station Direct Emissions	-665	Fuel combustion from locomotives idling at South Station and moving from and to the Tower 1 Interlocking
Locomotives to/from layover sites Direct Emissions	7,494	Fuel combustion from locomotives moving from and to the layover sites
Amtrak trains Indirect Emissions	202	Electricity use from eight Amtrak trains per day idling at South Station and moving from and to the Tower 1 Interlocking
Indirect emissions from plug-ins	2,465	Electricity use from locomotives connected to shore power at layover facilities (mitigation measure – see Section 3.8.3 below)
Total	**11,732**	**Sum of all other changes in this table**

tpy = tons per year

Consistent with Section 3.18 below, GHG emissions could result from project construction activities associated with the Build Alternative. Construction-related impacts could include direct emissions from construction (diesel) equipment, indirect emissions from construction (electric) equipment, and increased emissions from motor vehicles on local streets due to traffic disruption. The anticipated temporary construction activity does not appear to be exceptional or atypical for this type of project.

Table 3-11 above quantifies direct and indirect CO_2 emissions associated with the Build Alternative. The Build Alternative also has the cumulative effect of reducing GHG emissions regionally based on avoided commuter trips. The CTPS 2035 travel demand forecasts show a decrease in region-wide[29] CO_2 emissions associated with the transportation improvements at South Station of approximately 41,700 metric tpy. Because the study covers a much wider area, and uses a different methodology, these results cannot be

[29] The Boston Region MPO region encompasses 101 cities and towns, stretching from Boston to Ipswich in the north, to Duxbury in the south, and to approximately Interstate 495 in the west.

directly compared to the South Station-specific GHG emission calculations presented in Table 3-11, but the results do show that the transportation elements of the project further the goal of GHG emissions.

3.8.3. Mitigation Measures

The Build Alternative incorporates measures that serve to mitigate project-related GHG emissions impacts. The stationary source CO_2 emissions in Table 3-11 above reflect an 8% reduction beyond strict compliance with the 8th edition of the Massachusetts Building Code; this reduction is made using improved HVAC and improved lighting. The use of "plugins" at the layover facilities allows an improvement of 17,200 metric tpy of CO_2 by using the ground power receptacles instead of idling on the diesel engine.

Use of renewable energy may further reduce project-related GHG emissions impacts. These may include: use of solar photovoltaic (PV) panels to generate electricity for the proposed South Station headhouse expansion; use of solar hot water heating to supplement a typical gas-fired domestic hot water heating system; use of a gas-fired Combined Heat and Power (CHP) system to produce electricity and hot water; or potential connection to use of district steam. The final decision will be based on economic, reliability, complexity, and environmental factors. As examples, the feasibility of PV will depend on availability of non-shaded roof area, CHP use may be constrained by electrical interconnection logistics, and the GHG emissions benefit of district steam will depend on the energy efficiency of the district steam system. An analysis of each alternative is presented in FEIR Section 3.13. DEIR Chapter 5, *Sustainable Design and Climate Change Adaptation*, further details the sustainable design methodology.[30]

3.9. Aesthetics and Design Quality Impacts

The federal, state, and local regulations applicable to aesthetic and design quality impacts at the project sites include: FRA's *Procedures for Considering Environmental Impacts.* The following steps were completed to conduct an analysis of aesthetic and design quality impacts at the project sites:

- Conducted visual assessments for existing conditions, as well as the No Build and Build Alternative, based on views of South Station from Purchase Street (from the north), Dewey Square (from the northwest), Surface Road (from the west), Hudson Street (from the southwest), the Gillette site (from the southeast), Summer Street (from the east), directly across the Fort Point Channel (from the east), and from the Congress Street Bridge (from the northeast).
- Considered aesthetic and design quality conditions and impacts for the layover facilities.

3.9.1. Existing Conditions

South Station

The historic South Station headhouse faces multi-story commercial buildings flanking Atlantic Avenue and Summer Street at Dewey Square. Dewey Square is a dynamic intersection that processes considerable vehicular, bicycle, and pedestrian traffic. Across the intersection from South Station are the Dewey Square Parks and Rose Fitzgerald Kennedy Greenway. Across Atlantic Avenue from the station is Chinatown and the Leather District, which consists mostly of mid-rise brick office buildings in this area. The USPS GMF building dominates the landscape between the Fort Point Channel and the South Station Terminal. The four-story industrial style building is a mix of masonry and metal siding and totals over 1.1 million square feet. The majority of the logistics operations at this facility are handled on Dorchester Avenue and there is

[30] Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report, Chapter 5, Sustainable Design and Climate Change Adaptation*. October 2014. http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

significant truck activity along the entirety of this section of roadway. As shown in Figure 3-5, the headhouse is highly visible from the open plazas of Dewey Square and the Federal Reserve building across Summer Street. The headhouse has a lower profile in the Boston skyline in comparison to the adjacent buildings, including the Federal Reserve building (614 foot), One Financial Center (590 foot) across Atlantic Avenue, and 245 Summer Street (175 foot) on the same block.

To the west, South Station extends along Atlantic Avenue. Adjacent to South Station along Atlantic Avenue is the five-story South Station Bus Terminal and across Atlantic Avenue are the Chinatown and Leather District neighborhoods. From the southwest, views of South Station, which are largely from I-93, are dominated by the extensive rail infrastructure network of Tower 1 Interlocking. As shown in Figure 3-6, views of Dorchester Avenue include the narrow sidewalk and metal railing delineating the edge of Fort Point Channel and the USPS GMF.

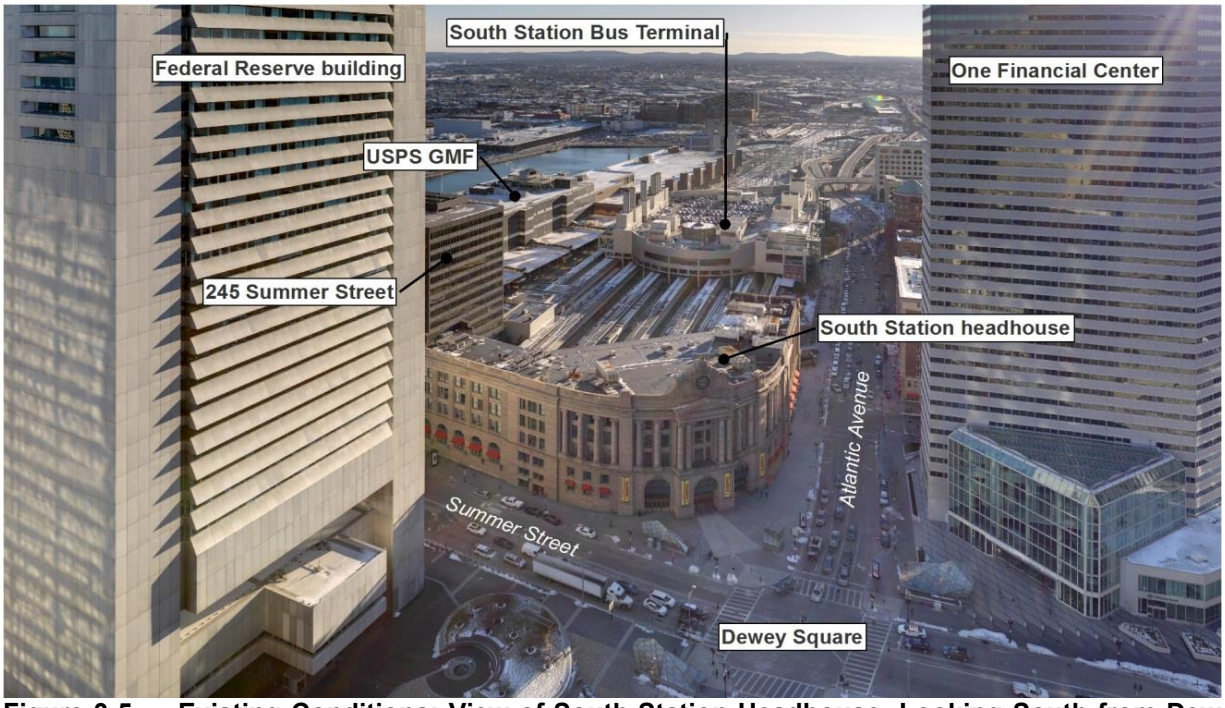

Figure 3-5 — Existing Conditions: View of South Station Headhouse, Looking South from Dewey Square

Figure 3-6 — Existing Conditions: View of Dorchester Avenue, Looking South from Summer Street

Layover Facilities

Figure 3-7 — View of Widett Circle, Looking North

As shown in Figure 3-7, the Widett Circle site is comprised primarily of a complex of food storage and processing facilities, including companies in the seafood and beef industry, on Widett Circle and Foodmart Road. Existing buildings on the Widett Circle site total approximately 292,400 square feet, and consist primarily of single- and two-story warehouse structures with expansive loading bays. The majority of the area around the structures and tracks is paved and used for truck and car parking. The area in the immediate vicinity of the site is dominated by industrial warehouses and associated paving and rail operations and support facilities, including Amtrak's Front Yard and Southampton Street Yard, and the MBTA's South Side Service and Inspection Facility, and Cabot Yard (the primary Red Line maintenance facility).

The Readville – Yard 2 site is an industrial property owned by the MBTA and occupied by the MBTA Readville Layover Facility. It contains a maintenance and repair structure, several mobile office trailers, and rail storage for up to 10 MBTA commuter rail trainsets of varying lengths. An area for materials storage is located along the eastern border of the site.

3.9.2. Environmental Consequences

No Build Alternative

As shown in Figure 3-8, a future condition at the South Station site is the planned SSAR project,[31] which includes a high-rise tower (Phase I) behind the headhouse, rising approximately 670 feet in height from grade. Three smaller mid-rise structures (Phase II and Phase III) will extend south over the bus terminal along Atlantic Avenue. These three structures will be taller than the existing South Station headhouse, but will be similar in height to 245 Summer Street.

In both the No Build and the Build Alternatives, the proposed SSAR project structures would be a major feature in Dewey Square, particularly SSAR Phase I. SSAR Phases II and III would be visible from Atlantic Avenue and generally would be in scale with the existing buildings of the Leather District. The South Station headhouse faces Summer Street and the 245 Summer Street building is just beyond the headhouse. The Federal Reserve building is to the left on the north side of Summer Street. SSAR Phase I would be visible rising above the South Station headhouse.

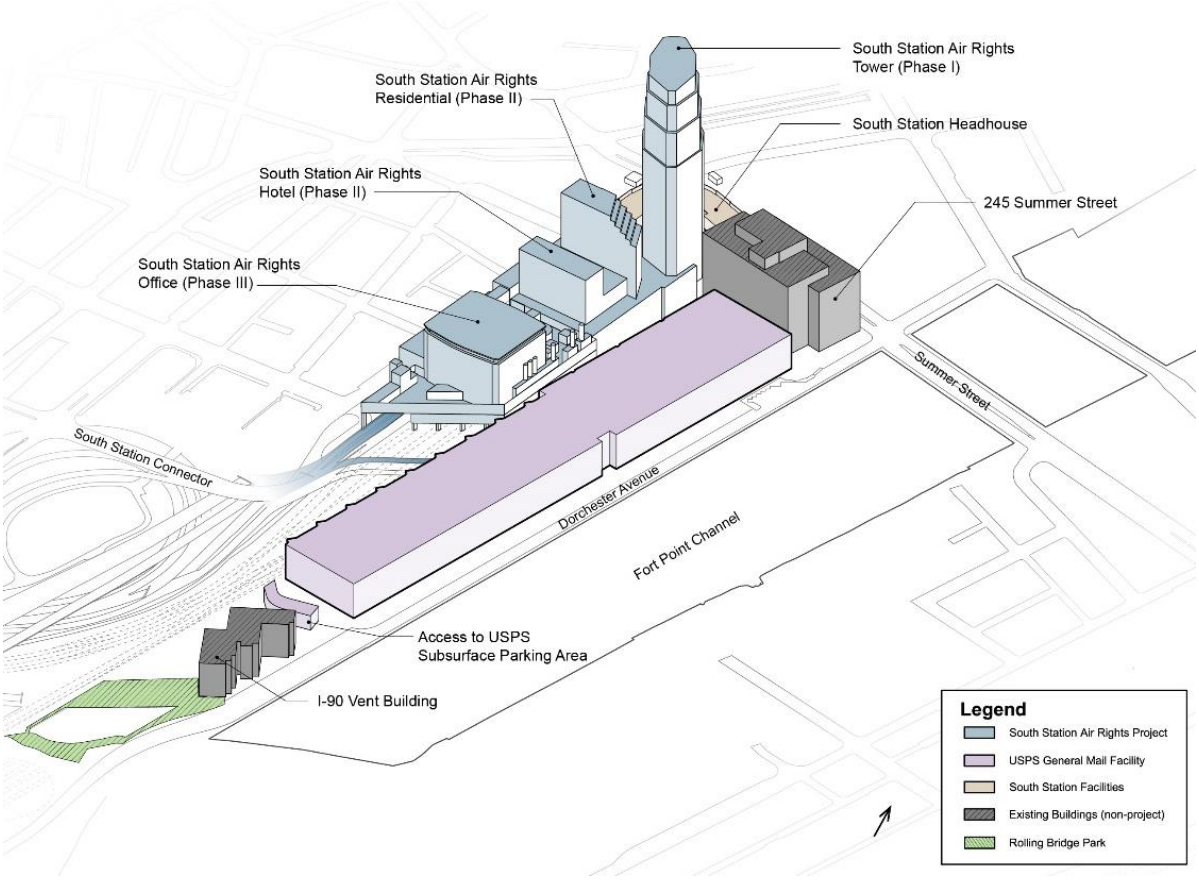

Figure 3-8 — Proposed SSAR Project

[31] The SSAR project was approved by the Secretary of the EEA in 2006 (EEA No. 3205/9131).

Build Alternative

South Station

The improvements proposed as part of the Build Alternative include structures and infrastructure that, when completed, would not be visible from Dewey Square, Atlantic Avenue, Chinatown, or the Leather District as the height of the proposed structures would be lower than the existing South Station headhouse, the bus terminal, and the SSAR project. The improvements proposed as part of the Build Alternative include construction of building or building elements that, when completed, would not be visible along Summer Street north of the intersection with Dorchester Avenue as the height of the structures would be lower than the 245 Summer Street building.

The view of the proposed South Station improvements along Dorchester Avenue and from across the Fort Point Channel would change dramatically. The section of Dorchester Avenue currently occupied by the USPS will be converted back to a public right-of-way, upgraded to meet MassDOT and City of Boston Complete Streets criteria. As shown in Figure 3-9, it would include landscaping and improved pedestrian and cycling connections and facilities, including sidewalks and crosswalks. Restoration also would include construction of an extension of the Harborwalk along the reopened Dorchester Avenue. Dorchester Avenue would be further activated by a new headhouse and passenger drop-off area that would provide both a physical and visual link to the waterfront. The new headhouse would be no more than 80 feet tall, with a proposed footprint of approximately 137,000 square feet. It would be designed to have a prominent entrance along Dorchester Avenue, bringing passengers directly into an atrium programmed with passenger amenities and services, station retail, and food and beverage concessions. The elevated concourse would also touch down on Dorchester Avenue and present another station entrance. The entrances would be designed with enough transparency for visual connections to and from the station. The noise wall would abut the easternmost track and would be the backdrop to the station entrances and open areas adjacent to them along Dorchester Avenue.

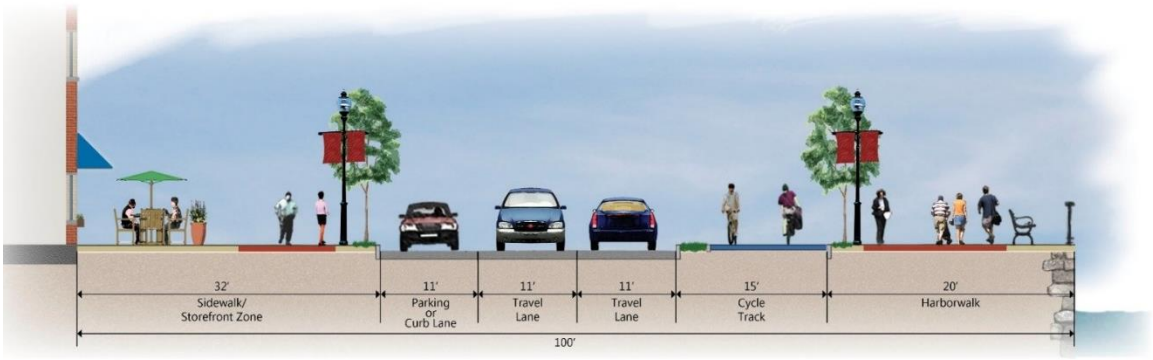

Figure 3-9 — Proposed Dorchester Avenue Cross-Section Looking Northeast

Layover Facilities

The proposed layover facility at Widett Circle would consist of a series of tracks separated by paved access roads and multiple support buildings. There would likely be three separate buildings totaling approximately 45,000 square feet and would be of similar height and materials of the buildings that exist today. Although the layout of the area will change from today, the visual effects would be minimal due to the consistent appearance of the proposed alternative with the existing area. The proposed layover facility at Readville –

Yard 2 would be an expansion of an existing rail layover facility. No significant visual impact would be created by the proposed expansion at either facility.

3.9.3. Mitigation

No mitigation related to aesthetics of design quality impacts would be required or proposed at the South Station or layover facility sites.

3.10. Transportation

This section describes the multimodal public transportation system, as well as vehicular, pedestrian, and bicycle traffic in and around the project sites. Detailed information is contained in the transportation technical reports prepared for the SSX DEIR.[32]

FRA's *Procedures for Considering Environmental Impacts*[33] requires an assessment of "the impacts on both passenger and freight transportation, by all modes, from local, regional, national, and international perspectives... (and) include(s) a discussion of both construction period and long-term impacts on vehicular traffic congestion."

Other applicable state and local statutes, regulations, and guidance include:

- MEPA Regulations, 301 CMR 11.00;
- City of Boston Zoning Code and Boston Complete Streets Guidelines;
- BTD Traffic Signal Operations Design Guide (2004);
- BTD Traffic Signal Design Submission Requirements (2004);
- BTD Traffic Engineering Standard Plans and Specifications;
- MassDOT Highway Division Traffic and Safety Engineering 25% Design Submission Guidelines;
- Boston Fire Prevention Code Section 7.09, Access for Fire Department Apparatus and Personnel; and
- City of Boston PIC Ordinances of 1961, Chapter 21, Section 36.

The Project Team conducted a transportation assessment of the project sites, which:

- Defined the study area;
- Collected data and conducted field observations;
- Completed a safety assessment;
- Developed a traffic model;
- Developed traffic generation and parking rates;
- Prepared a travel demand forecast;

[32] Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report, Appendix 9 (Parts 1-4), Traffic Analysis Technical Report, Pedestrian Analysis Technical Report, Ridership Forecasting Technical Report, and Transit Capacity Analysis Technical Report*. October 2014. http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

[33] Federal Railroad Administration. *Procedures for Considering Environmental Impacts, Federal Register 28545, Vol. 64, No. 101, Wednesday, May 26, 1999. https://www.fra.dot.gov/eLib/Details/L02710*

- Conducted a traffic operations assessment and transit crowding analysis; and
- Identified mitigation and transportation demand management (TDM) strategies.

The Project Team considered three sites (South Station, Widett Circle, and Readville-Yard 2) in this evaluation. As an initial step, City officials from the BTD and BPDA (formerly the BRA) were contacted to identify key intersections and roadways to be included in the transportation assessment.

3.10.1. Existing Conditions

South Station

Public Transportation

South Station currently handles approximately 128,000 daily combined Amtrak, MBTA, and intercity/commuter bus boardings and alightings. All 13 intercity and commuter rail tracks at South Station are fully utilized by Amtrak and the MBTA. Similarly, all 29 bus gates are assigned to one of the 11 private bus companies operating at the bus terminal. Table 3-12 summarizes Amtrak's service at South Station. There are eight MBTA commuter rail routes serving South Station. Each weekday, South Station serves approximately 42,000 commuter rail passenger boardings and alightings, which are listed by route in Table 3-13.

Table 3-12 — Amtrak Service at South Station

Route	Destination	Major Cities Served	Weekday Round Trips
Acela Express	Washington, DC	Boston – Providence – New Haven – New York – Philadelphia – Baltimore – Washington, D.C.	10
Northeast Regional	Newport News/ Lynchburg, VA	Boston – Providence – New Haven – New York – Philadelphia – Baltimore – Washington, D.C. – Lynchburg / Richmond – Newport News	9
Lake Shore Limited	Chicago, IL	Boston – Albany – Buffalo – Cleveland – Toledo – Chicago	1

Source: Amtrak website www.amtrak.com .

Table 3-13 — Existing Weekday MBTA Commuter Rail Boardings and Alightings at South Station

MBTA Route	Total Boardings and Alightings at South Station
Fairmount Line	767
Framingham/Worcester Line	7,197
Franklin Line	5,775
Greenbush Line	3,817
Kingston/Plymouth Line	4,853
Middleborough/Lakeville Line	4,301
Needham Line	3,517
Providence/Stoughton Line	11,487
Total	**41,714**

Source: CTPS, *MBTA Commuter Rail Passenger Count Results*, December 21, 2012.

In addition to intercity and commuter rail service, South Station also provides rapid transit service connections to the MBTA's Red Line (heavy rail) and Silver Line (bus rapid transit). Existing Red Line ridership at South Station totals approximately 54,000 combined weekday boardings and alightings.

Table 3-14 shows the total boardings and alightings for the Silver Line 1 and Silver Line 2 routes, which provide service between South Station and Logan Airport, and South Station and the Design Center in the Boston Marine Industrial Park, respectively. The Silver Line 4 provides service from South Station (at Essex Street and Atlantic Avenue, across from the existing station headhouse) to Dudley Square.

Table 3-14 — Existing Weekday MBTA Bus Rapid Transit Boardings and Alightings at South Station

Route	Total Boardings and Alightings at South Station
Silver Line 1 – Logan Airport – South Station via Waterfront and Silver Line 2 – Design Center – South Station via Waterfront	12,700[a]
Silver Line 4 – Dudley Station – South Station at Essex Street via Washington Street	2,208

Source: MBTA ridership counts provided by Greg Strangeways, Fall 2012.
a Per *Final SSX Ridership Results* provided in DEIR Appendix 9 (Part 3), *Ridership Forecasting Technical Report.*

Local bus service connections at South Station include six local bus routes with stops immediately adjacent to the South Station headhouse on Summer Street. Table 3-15 presents the current total weekday boardings and alightings at bus stops adjacent to South Station.

Table 3-15 — Existing Weekday MBTA Local Bus Boardings and Alightings at South Station

Route	Total Boardings and Alightings at South Station
Route 4 – North Station – Tide Street via Federal Courthouse and South Station	42
Route 7 – City Point – Otis and Summer Streets via Summer Street and South Station	1,865
Route 11 – City Point – Downtown Bay View Route	405
Route 448 – Marblehead – Downtown Crossing via Paradise Road	19
Route 449 – Marblehead – Downtown Crossing via Paradise Road	11
Route 459 – Salem Depot – Downtown Crossing via Logan Airport and Central Square, Lynn	109

Source: MBTA ridership counts provided by Greg Strangeways, Fall 2012.

There are 11 privately owned bus companies (including, for example, Bolt Bus, Megabus, Peter Pan, and Greyhound) that operate out of the South Station Bus Terminal, which is located directly over the rail tracks. The bus terminal has a total of 29 gates and is owned by the MBTA, with property management services contracted to a private company. Private bus carriers provide commuter services between South Station, and the surrounding Greater Boston area, Cape Cod, and Worcester, as well as nearly 24-hour intercity service to other locations in New England and beyond, including substantial express service to New York City and long distance service to major cities such as Philadelphia and Washington, D.C.

Roadways and Vehicular Traffic

The key roadways and 21 intersections evaluated in the South Station traffic study area are described in DEIR Appendix 9 (Part 1), *Traffic Analysis Technical Report*.[34] The primary roadways in the vicinity of South Station are Atlantic Avenue, Dorchester Avenue, Summer Street, and the South Station Connector. The three most heavily traveled roadways in the immediate vicinity of South Station are Summer Street, Kneeland Street, and Congress Street. Summer Street carries 20,800 vehicles per day, Kneeland Street carries 16,900 vehicles per day, and Congress Street carries 15,900 vehicles per day. Immediately adjacent to South Station, Atlantic Avenue carries 13,600 vehicles per day.

South Station generates 5,400 vehicle trips per day. Curbside activity along Atlantic Avenue has a major influence on traffic flow. This includes 3,400 curbside trips along Atlantic Avenue made up of 1,900 taxicab trips and 1,500 trips made by passenger vehicles and commercial delivery vehicles, all of which are competing for limited curb space along Atlantic Avenue. On a typical weekday, 13% of the traffic on Atlantic Avenue is for curbside operations. During the peak hours (morning peak hour between 8:00 and 9:00 a.m.; evening peak hour between 5:00 and 6:00 p.m.), congestion on Atlantic Avenue caused by heavy commuter traffic volumes is exacerbated by the curbside activity.[35]

Pedestrians

Pedestrian counts conducted in 2012 and 2013 as part of the SSX DEIR indicate that during the morning peak hour surge (between 8:00 and 9:00 a.m.), approximately 2,430 pedestrians travel from South Station to Dewey Square Plaza at street level. During the evening peak hour surge (between 5:00 and 6:00 p.m.), approximately 2,330 pedestrians travel from Dewey Square to South Station at street level. The majority of pedestrians leaving South Station cross Atlantic Avenue, and many of these pedestrians proceed to cross Summer Street toward Dewey Square Plaza in very large surges, corresponding to commuter rail train arrivals.

Of the pedestrians headed to Dewey Square Plaza, many do not cross at the crosswalk across Summer Street, but choose to cross diagonally. If the signal phasing is not favorable, most pedestrians do not wait for the walk phase and execute a diagonal crossing across Summer Street. This identical pattern, in reverse, occurs in the evening peak.

There is no pedestrian access allowed along the private portion of Dorchester Avenue. There is no Harborwalk along this portion of Fort Point Channel.

Bicycles

Growth in bicycle transportation in the Boston metropolitan area has increased substantially over the past decade. Bicycle counts conducted in September 2012 and 2013 as part of the SSX DEIR indicate peak hours similar to pedestrian peak hours. The highest bicycle volumes in the area were observed on Essex Street and on Summer Street adjacent to South Station. A high number of bicyclists cross Fort Point Channel along Summer Street, Congress Street, and Seaport Boulevard. Bicyclists were also observed during both the morning and evening peak hours along Kneeland Street in the vicinity of the I-90/I-93 highway access ramps.

[34] Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report, Appendix 9, Traffic Analysis Technical Report*. October 2014. http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

[35] *Ibid.*

Hubway is the Boston area's bicycle sharing system, providing more than 1,600 bicycles at 180 stations throughout Boston, Brookline, Cambridge, and Somerville. Hubway's bicycle sharing system has a seasonal bicycle station located along Atlantic Avenue at South Station where 47 bicycle slots are available. A review of the entire Hubway system use in the downtown area from October 2012 to October 2013 indicates that South Station consistently ranks as the busiest or second busiest station in the entire system.

Roadway/Intersection Level of Service

Table 3-16 presents the existing LOS for the South Station study area intersections. LOS is the traffic engineering metric used to denote the different vehicle[36] operating conditions that occur on a given roadway or intersection under various volume loads. LOS A (under 10 seconds of delay) represents the best operating conditions, while LOS F (over 80 seconds of delay) represents the worst operating conditions. Typically, an overall LOS D or better is considered acceptable for motor vehicles in an urban environment, which equates to under 55 seconds of delay. In some cases, LOS E conditions, or between 55 and 80 seconds of delay, are acceptable for motor vehicles in an urban environment in order to accommodate pedestrians or bicyclists. Under existing conditions, the two unsignalized intersections in the South Station study area (Atlantic Avenue at East Street and Dorchester Avenue at West 2nd Street) operate at LOS D or better during the morning and evening peak hours. The majority of the 19 signalized intersections operate at an overall LOS D or better during the morning and evening peak hours.

Table 3-16 — Existing Conditions at South Station Area Intersections – Levels of Service

Intersection	Morning Peak Hour Overall LOS	Evening Peak Hour Overall LOS
Congress Street at Dorchester Avenue	C	B
Summer Street at Dorchester Avenue	E	D
Atlantic Avenue at I-93 On-Ramp / Seaport Boulevard	F	F
Atlantic Avenue at Congress Street	C	C
Purchase Street at Congress Street	C	E
Atlantic Avenue at Summer Street	F	D
Purchase Street at Summer Street	C	B
Atlantic Avenue at Essex Street	C	C
Surface Road at Essex Street/Lincoln Street	C	D
Atlantic Avenue at East Street (unsignalized)	B	B
Atlantic Avenue at Beach Street	A	A
Atlantic Avenue at Kneeland Street	E	D
Kneeland Street at Lincoln Street	C	D
Surface Road at Kneeland Street	D	E
Lincoln Street at South Station Connector	A	B
Surface Road at South Station Connector	A	A
Dorchester Avenue at West 2nd Street (unsignalized)	C	C
Dorchester Avenue at West Broadway/Traveler Street	F	F
Dorchester Avenue at West 4th Street	F	F
Purchase Street at I-93 Off Ramp/Seaport Boulevard	C	D
Congress Street at A Street/Thompson Place	C	C

[36] The DEIR analyzed LOS for vehicles within the study area. While pedestrian LOS was analyzed within South Station itself, it was not analyzed for the traffic study area. Bicycle LOS was not analyzed.

Safety Review – South Station

MassDOT reviewed latest available crash data records on the 21 study area intersections for January 2012 through December 2014 to determine if safety concerns exist for vehicles, pedestrians, and/or bicyclists in the South Station area. Within the study area, all intersections were below the average crash rate for MassDOT District 6 intersections (0.70 for signalized intersections and 0.53 for unsignalized intersections).

Layover Facilities

Traffic data were collected at the two layover facility sites to assess how well the site driveways handle traffic entering and exiting the sites. The traffic entering and exiting the layover facilities is largely commercial trucks, service vehicles, and crew passenger vehicles.

Two intersections were assessed in the vicinity of the Widett Circle site: Frontage Road/Widett Circle Access Road, and Widett Circle/Widett Circle Access Road. Operations at the Widett Circle site show an overall intersection LOS A at the signalized Frontage Road/Widett Circle Access Road intersection during all peak hours. The Widett Circle Access Road operates at LOS C during all peak hours. The unsignalized intersection of Widett Circle and Widett Circle Access Road operates at LOS A throughout the day, with all approaches also operating at LOS A.

Two intersections were assessed in the vicinity of Readville – Yard 2: Hyde Park Avenue/Neponset Valley Parkway/Wolcott Court/Wolcott Square, and Wolcott Court/Layover Driveway. The Readville – Yard 2 signalized intersection of Hyde Park Avenue/Neponset Valley Parkway/Wolcott Court/Wolcott Square operates at an overall LOS C during the morning peak period. All intersection approaches operate at LOS D or better. During the midday, the intersection operates at an overall LOS B. During the evening peak period, it operates at an overall LOS D. The Neponset Valley Parkway westbound approach operates at LOS E during the evening peak hour; all other approaches operate at LOS D or better. The unsignalized intersection of Wolcott Court/Wolcott Street/Layover Driveway operates at LOS A throughout the day, with all approaches also operating at LOS A.

Safety Review – Layover Facility Sites

MassDOT reviewed crash data records for the two layover facility sites for January 2012 through December 2014[37] to determine if safety concerns exist for vehicles, pedestrians, and/or bicyclists in the vicinity of the two layover facility sites. All intersections at the layover facility sites were below the average crash rate for District 6, indicating that based on the volume of traffic traveling through the intersections, the crash frequency is below average.

3.10.2. Environmental Consequences

South Station

The impacts of the No Build Alternative and Build Alternative on public transportation and roadways and intersections at South Station are described below.

[37] Crash data records from January 2009 through December 2011 are the most recent data available.

Public Transportation

Ridership

Projected ridership data were provided by the Boston Region MPO, CTPS, and Amtrak.[38] The 2035 travel demand forecasts provided by CTPS assume the implementation of several transportation projects by 2035, consistent with the currently adopted Regional Transportation Plan (RTP) of the Boston Region MPO. Details of the methodology used to develop ridership data are provided in DEIR Appendix 9, *Ridership Forecasting Technical Report.*[39] Table 3-17 presents the projected ridership at South Station for two time horizons, 2025 and 2035, associated with the No Build Alternative and the Build Alternative, compared to existing conditions.

By 2035, total South Station ridership for the Build Alternative would result in approximately 198,000 daily combined boardings and alightings, a 13% increase over 2035 No Build Alternative ridership. Of the total ridership, Amtrak and MBTA commuter rail ridership would increase to approximately 81,000 daily combined boardings and alightings in the Build Alternative, a 33% increase over 2035 No Build Alternative ridership. Projected ridership growth between the No Build Alternative and the Build Alternative is directly attributable to increased commuter rail and Amtrak intercity rail service made possible by the expansion of South Station.

Table 3-17 — Daily Combined South Station Boardings and Alightings

Alternative	Amtrak	MBTA Commuter Rail	Amtrak and Commuter Rail Total[a]	MBTA Red Line	MBTA Silver Line	MBTA Local Bus	Intercity/ Commuter Bus	Total[a]
Existing Conditions	4,100	42,000	46,000	54,000	12,700	2,900	12,200	128,000
No Build Alternative (2025)	5,200	53,000	58,000	68,000	22,800	3,600	12,700	165,000
Build Alternative (2025)	8,100	65,000	74,000	70,000	23,200	3,600	12,500	183,000
No Build Alternative (2035)	5,500	56,000	61,000	72,000	25,600	3,800	12,800	175,000
Build Alternative (2035)	9,300	72,000	81,000	74,000	26,100	3,800	12,600	198,000

Source: *Final SSX Ridership Results* provided in Appendix 9 (Part 3), *Ridership Forecasting Technical Report*.
Note: All results rounded to the nearest 100, except for Commuter Rail, Red Line and Total results, which are rounded to the nearest 1,000.
a Total values are calculated using precise/unrounded results. As such, the sum of rounded individual ridership results may not add up to the rounded Total ridership results presented in this table.

As discussed in Chapter 1 of this EA, FRA used a 2040 horizon year for making ridership projections and determining future travel conditions when developing alternatives and conducting the analysis in FRA's NEC FUTURE program; here, the Project Team developed the SSX project based on a 2035 horizon year. In order for South Station to accommodate the 2040 service levels in the NEC FUTURE Preferred Alternative, additional infrastructure improvements beyond those proposed in this SSX project would need

[38] Amtrak. *South Station Boston Expansion Project Projected Intercity Train Movement and Ridership Data to Support the Evaluation of Yard and Train Servicing Needs and Pedestrian Modeling of the Station.* September 26, 2013.

[39] Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report, Appendix 9 (Part 3), Ridership Forecasting Technical Report*. October 2014. http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

to occur at South Station as well as throughout the NEC. FRA is advancing the NEC FUTURE program concurrent and in coordination with the SSX project. The SSX project will not preclude the improvements proposed by the NEC FUTURE program; rather, the SSX project includes investments that can later be leveraged by MassDOT and FRA to implement the additional improvements proposed by the NEC FUTURE program to accommodate service levels beyond 2035.

Transit Capacity

MassDOT assessed the impacts of the predicted increase in ridership at South Station due to the Build Alternative upon future capacity on the MBTA's commuter rail, rapid transit, and local bus routes. MassDOT also evaluated how projected ridership increases would affect station and platform capacities for MBTA operations both within South Station and at key stations within the downtown core of the MBTA rapid transit system. MassDOT compared projected ridership demands to available vehicle capacities as identified by the MBTA's *Service Delivery Policy,*[40] which defines levels of crowding that are acceptable by time period and mode of transportation. The assessment included a station capacity analysis of South Station, including an analysis of projected pedestrian flows resulting from the Build Alternative. Details of the methodology and results are provided in DEIR Appendix 9 (Part 4), *Transit Capacity Analysis Technical Report.*[41]

The Build Alternative would not result in crowding impacts to rapid transit or local bus routes that would exceed the MBTA's *Service Delivery Policy* maximum load over and above impacts anticipated in the No Build Alternative. SSX project-related ridership increases at stations in the Downtown core would be unnoticeable. Ridership growth between 2012 existing conditions and the 2035 No Build Alternative condition is anticipated due to forecasted growth in population, households, and employment, as well as changes in land use and transit services.

For commuter rail, 2035 Build Alternative passenger loading on the outbound Canton/Stoughton/Proposed South Coast Rail Line is projected to exceed the MBTA *Service Delivery Policy's* acceptable level of crowding during the peak evening hour, defined as 110 percent of seat capacity. Over the entire three-hour evening peak period, however, there would be more than sufficient capacity to accommodate the projected passenger load demands. As South Coast Rail operations are further defined, minor schedule adjustments could be made to provide additional capacity during the peak hour and alleviate any capacity issues during the maximum load time.

From the SSX DEIR Appendix 9 (Part 4), *Transit Capacity Analysis Technical Report*, pedestrian flow increases at South Station due to the Build Alternative would result in a 2% increase in daily Silver Line platform activity (measured in passenger boardings and alightings) above the 2035 No Build Alternative conditions. The Build Alternative would increase passenger activity on South Station's Red Line platforms by less than 5% above No Build Alternative levels.

Pedestrian Circulation

The existing passenger waiting area and circulation zone are inadequately sized and configured to accommodate the current daily demand. This often results in an unacceptable passenger experience of LOS E/F (minimum five square feet per person) that occurs for short periods during periods of peak

[40] Massachusetts Bay Transportation Authority. *Service Delivery Policy*. June 2, 2010. https://www.mbta.com/uploadedfiles/About_the_T/T_Projects/T_Projects_List/2010ServiceDeliveryPolicy.pdf

[41] South Station Expansion Project. *Draft Environmental Impact Report, Appendix 9 (Part 4), Transit Capacity Analysis Technical Report*. October 2014. http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

boarding and alighting. An LOS E/F indicates that passing and cross flows are very difficult and flow is sporadic with frequent stopping.

In the No Build Alternative, passengers would experience unacceptable LOS more frequently due to projected increases in pedestrian flow through the station.

By 2035, Amtrak's and MBTA's commuter rail future service plans would add approximately 20,000 passengers per day arriving at South Station over the No Build Alternative, and the new station design would provide adequate space and appropriate facilities to safely and conveniently manage the projected peak-hour pedestrian demand. The station's size is designed relative to the pedestrian circulation elements that are fundamental to servicing the passenger demand. To create a comfortable and contemporary transportation facility, MassDOT established an overall goal of LOS C during peak periods to accommodate passengers of the South Station public circulation, waiting areas, and station platforms. This goal is typically established for a facility of this type as this LOS safely and conveniently accommodates passengers during peak times, while not being oversized for the non-peak times. The introduction of additional station access points will help to reduce pedestrian congestion at all access points during peak periods. The station design will also include a concourse level to allow passenger access mid-platform and reduce pedestrian circulation to and from the trackhead concourse.[42]

Pedestrians and Bicycles

The SSX project would provide substantial benefits to pedestrians and bicyclists.

- The project would improve the separation of vehicle traffic from non-vehicular traffic. The reopening of Dorchester Avenue prioritizes pedestrian and bicycle accommodations on the Fort Point Channel side of the roadway, separated from the vehicular curbside activity at the new station headhouse on Dorchester Avenue.

- The project would enhance the pedestrian realm through the reopening of Dorchester Avenue as a public street, and extending the existing Harborwalk by approximately one-half-mile along the Fort Point Channel.

- The project would improve bicycle infrastructure along the reopened segment of Dorchester Avenue by providing a new cycle track, connect existing bicycle infrastructure such as the South Bay Harbor Trail, and complement future plans developed by the City such as the Summer Street bicycle enhancements.

Roadways and Intersections

The SSX project would provide substantial benefits to vehicular traffic, pedestrians, and bicyclists in the Build Alternative.

- From the traffic demand forecasting conducted as part of the SSX DEIR, the project would reduce curbside traffic on Atlantic Avenue due to the diversion of 30% to 40% of curbside traffic from Atlantic Avenue to Dorchester Avenue.

- The project would minimize parking, support BTD's parking management program,[43] and advance MassDOT's Healthy Transportation Policy Directive goal to promote healthy transportation and

[42] The trackhead concourse refers to the exterior passenger circulation area between the enclosed headhouse and the tracks.

[43] Boston Transportation Department. *Access Boston 2000 – 2010*. http://www.cityofboston.gov/TRANSPORTATION/accessboston/

livable communities. The Build Alternative would result in a net decrease of 242 structured parking spaces on the site due to the relocation of the USPS facility. Table 3-18 presents a comparison of the South Station study area intersections, comparing overall intersection LOS in the No Build Alternative and the Build Alternative in 2025 and 2035. In each alternative, the intersections are tallied by their LOS ratings.

Table 3-18 — South Station Area Intersections – Levels of Service, 2025/2035

Alternative	A.M. Peak Hour Overall Intersection Capacity		P.M. Peak Hour Overall Intersection Capacity	
	LOS D or better	LOS E or LOS F	LOS D or better	LOS E or LOS F
No Build	14/11	7/10	11/9[a]	10/12
Build Alternative	15[a]/13[a]	6/8	12/11	9/10

[a] The overall LOS rating applies with the exception of one approach, which operates at a lower LOS.
For more detail, see Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report, Appendix 9 (Part 4), Transit Capacity Analysis Technical Report*. October 2014.
http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

Layover Facilities

For the Widett Circle and Readville – Yard 2 layover facility sites, intersection traffic operations would not be degraded as a result of the layover facility operations in the Build Alternative. The Build Alternative would have low passenger vehicle and service vehicle traffic generation for the layover facility sites. The layover facilities are projected to generate six or fewer vehicle trips during the commuter morning and evening peak hours, amounting to less than one vehicle trip every 10 minutes. During the midday, traffic generation would vary from one vehicle every three minutes to one vehicle every five minutes, depending on the site.

3.10.3. Mitigation Measures

While the MassDOT or BTD guidelines set no defined threshold limits, the analysis presented in the DEIR Appendix 9 (Part 1), *Traffic Analysis Technical Report*, shows there are insignificant operational impacts (LOS grade changes due to high increases in delay) to the study area intersections due to the SSX project. The proposed intersection improvements discussed below (where project impacts are insignificant) would improve overall operations for the surrounding area inclusive of the SSX project.

South Station

The station design for the Build Alternative would reduce areas of congestion and poor pedestrian LOS, including projected pedestrian congestion on at-grade rail platforms and within the trackhead concourse, by providing improved pedestrian circulation accommodations. Passenger boarding and alighting would occur from both the trackhead and a new elevated concourse, which would facilitate mid-platform boarding and alighting during normal operations, thereby reducing the overall congestion level on the platforms and concourses. No mitigation measures would be required to address transit system capacity constraints beyond minor schedule adjustments recommended by MassDOT or the MBTA for peak period commuter rail service.

Layover Facilities

No mitigation related to transportation would be required or proposed at the layover facility sites.

Intersection and Roadway Mitigation

In the Build Alternative, MassDOT would implement intersection and roadway improvements at several locations to address LOS deficiencies, improve traffic flow, and increase pedestrian and bicycle mobility. DEIR Appendix 9 (Part 1), *Traffic Analysis Technical Report,* provides additional information. The roadway and intersection mitigation includes the following commitments:

- Improve bicycle accommodations on Atlantic Avenue as determined by the city, such as provision of a bicycle lane;
- Provide dedicated curbside space for taxicabs and drop-off/pick-up activity; and
- Remove six parking meters and reprogram the curb to accommodate drop-off or taxicabs.

The following intersection improvements would improve traffic flow, reduce queuing, and improve pedestrian and bicycle mobility:

- **Atlantic Avenue at Summer Street.** Restripe the shared left/through lane (to an exclusive through lane) and increase the timing for the exclusive pedestrian crossing along with corresponding pavement markings to allow diagonal pedestrian crossings to more efficiently accommodate pedestrians through Dewey Square.
- **Purchase Street at Summer Street.** Add a crosswalk across Summer Street to improve pedestrian crossing options.
- **Surface Road/Essex Street/Lincoln Street.** Simplify traffic movements to the extent possible and shorten crosswalks to improve existing intersection geometry.
- **Atlantic Avenue at Kneeland Street/Frontage Road/I-90 Off-Ramp.** Update MBTA access drive loop detection with the ability to skip the phase if there is no vehicle present. Update and optimize intersection timing, phases, and offset.

Due to the reopening of Dorchester Avenue in the Build Alternative, signal timing changes and associated improvements would be required at the following intersections: Summer Street at Dorchester Avenue, Congress Street at Dorchester Avenue, Dorchester Avenue/West Broadway/Traveler Street, and Dorchester Avenue/West 4th Street.

Transportation Demand Management Measures

In addition to intersection improvements, and consistent with MassDOT's efforts to reduce automobile dependency, TDM commitments for the SSX project would include the following:

- Incorporate bicycle parking in the new headhouse on Dorchester Avenue;
- Participate in the U.S. EPA SmartWay Transport Program to increase energy efficiency and reduce greenhouse gas emissions;
- Provide electronic signage displaying transit schedule information;
- Accommodate curbside space for a shuttle bus stop along Dorchester Avenue for shuttle buses that currently serve the South Boston Waterfront/Innovation District;
- Collaborate with the City of Boston to improve bicycle accommodations along Atlantic Avenue from Kneeland Street to Summer Street; and

- Prepare a Construction Management Plan (CMP) for BTD to minimize disruption in the area throughout construction.

Details of each element of the TDM plan for the project would be refined throughout the engineering design phase. MassDOT would coordinate with the City of Boston to identify elements of the CMP to minimize disruption to transit users, pedestrians, bicyclists, and drivers in the area throughout construction.

3.11. Possible Barriers to Handicapped and Elderly

The federal, state, and local regulations applicable to possible barriers to handicapped and the elderly at the project sites include:

- The Americans with Disabilities Act of 1990 ("ADA"), 42 U.S.C. § 12101; and
- CMR Section 521: Massachusetts Architectural Access Board (MAAB).

The following steps were taken to conduct an assessment of the possible barriers to handicapped and the elderly at the project sites:

- Compared existing conditions to applicable regulations; and
- Consulted and adhered to applicable regulations during the design of the Build Alternative.

3.11.1. Existing Conditions

Under existing conditions, there is no pedestrian access allowed along the private portions of Dorchester Avenue nor is there a convenient/continuous accessible route along this portion of Dorchester Avenue. Within the existing South Station headhouse, the passenger waiting area and circulation zone is inadequately sized to accommodate the current peak demands, creating a mobility barrier during surge commute times. This crowding condition during surge periods is particularly problematic for the elderly and handicapped patrons.

Information is currently unavailable regarding possible barriers to handicapped or the elderly within the existing private properties at Widett Circle. The existing Readville – Yard 2 layover facility is not open for public access, and therefore not required to be accessible.

3.11.2. Environmental Consequences

No Build Alternative

In the No Build Alternative, the site would continue to restrict access to Dorchester Avenue, and the South Station headhouse would continue to create mobility barriers during surge commute times. Widett Circle and Readville – Yard 2 are not open to public access, and therefore not required to be accessible.

Build Alternative

In the Build Alternative, the new portions of South Station would be designed to be compliant with the ADA and MAAB regulations. This includes interior circulation within the new headhouse as well as exterior circulation along the reopened portion of Dorchester Avenue and the new Harborwalk along the Fort Point Channel.

The SSX project would create an integrated station for bus, rail, subway, and intercity patrons that will enhance access for the elderly and handicapped. The new expanded station will provide both a physical and visual link to the waterfront via a reopened Dorchester Avenue and an extension of the Harborwalk, a fully accessible walking path.

The new station design would provide adequate space and appropriate facilities to safely and conveniently manage the projected peak-hour pedestrian demand. Passenger amenities (such as comfortable waiting areas and restrooms), passenger services, station retail, and food and beverage concessions would be designed to be fully accessible.

In order to comply with the current egress capacity and travel distance requirements, at least three points of egress would be provided at all platforms, including stairs, escalators, and elevators as needed. Elevators would be conveniently located for the mobility-impaired and disabled to prevent possible conflict with general passenger flows. All new platforms would be 26 feet wide to meet current ADA standards.

The ADA and MAAB require access to the public right-of-way for people with disabilities. Access to traffic and signal information is a key feature of accessible sidewalks and street crossings for pedestrians who are disabled or have vision impairments. The design of Dorchester Avenue includes wide sidewalks and compliant transition ramps at crosswalks with detectable warning pads. New and upgraded traffic signals would include installation of Accessible Pedestrian Signals (APS), consistent with MassDOT's APS Installation Policy (effective June 1, 2012) and City of Boston Transportation Department Traffic Engineering Design Standards.

The Widett Circle and Readville – Yard 2 layover facilities would not be open for public access, but would be designed in accordance with MBTA policy regarding employee accessibility.

3.11.3. Mitigation Measures

No mitigation related to barriers to the handicapped or elderly would be required or proposed at the South Station or layover facility sites.

3.12. Land Use and Zoning

The following federal, state, and local regulations and guidance provide the regulatory context for the land use and zoning analysis:

- MEPA Regulations, including 301 CMR 11.07(6)(g), "*...zoning districts, and other relevant land-use designations or plans (e.g., local or regional capital improvement plans or infrastructure investments, economic development, growth planning and open space plans, etc.), business districts, industrial parks, housing stock, and vacancy rates*...;" and
- City of Boston Zoning Regulations and local plans.

For the land use and zoning assessment at the project sites, the Project Team:

- Defined the land use study areas;
- Documented existing land use conditions and local zoning and master plans in the study areas;
- Evaluated the proposed project for consistency with existing land use, zoning, and land use plans, noting that while the project is not subject to local zoning ordinances, every effort will continue to

be made during the design process to develop the project to be consistent with the BPDA land use policies and objectives; and

- Identified the range of mitigation measures.

3.12.1. Existing Conditions

South Station

The one-half-mile South Station study area for land use and zoning includes several neighborhoods including Downtown to the north, the South Boston Waterfront/Innovation District to the east, and Chinatown and the Leather District to the south and west. These neighborhoods are dominated by commercial and mixed-use buildings, interspersed with high-density residential uses. The BPDA (formerly BRA) designates the 49-acre South Station site land use as exempt/institutional, which includes social, institutional, and infrastructure-related uses. Both the South Station Rail Terminal and the South Station Bus Terminal contain commercial land uses, including eateries and retail stores/services/kiosks geared toward rail and bus patrons. The South Station headhouse also contains retail uses and office space on the upper floors.

Layover Facilities

The Widett Circle study area is located in an industrially zoned area in South Boston, dominated by industrial uses and rail operations and support facilities, including Amtrak's Front Yard and Southampton Street Yard; the MBTA's South Side Service and Inspection Facility; and Cabot Yard, the primary MBTA Red Line train maintenance facility.

The BPDA designates existing land use on the Widett Circle site as commercial and exempt/institutional. The site is currently used for private non-rail related uses in the food processing, food storage, and food logistics industry. The site also contains two public roads owned by the City of Boston: Widett Circle and Foodmart Road.

Readville – Yard 2, which is owned by the MBTA and currently used as a layover facility for its south side operations, is located within the Readville Industrial Area in the Hyde Park neighborhood. Land uses within the study area include residential, commercial, and light industrial uses directly south of the site, and the Neponset River and the Neponset River Reservation, located east/southeast of the site. The BPDA designates Readville –Yard 2 as an exempt/institutional land use. A portion of the project site, currently owned by the James G. Grant Co. LLC, is used for demolition and debris and does not contain any permanent structures.

3.12.2. Environmental Consequences

No Build Alternative

In the No Build Alternative, there would be no impacts to land use or zoning.

Build Alternative

South Station

The expansion of South Station is consistent with city-wide and neighborhood planning and development policies and programs. The City of Boston is undergoing a city-wide planning process called Imagine

Boston 2030 to create a framework to preserve and enhance Boston. Concurrently, the City is considering a master plan for the South Station/USPS area that will reflect the goals of the Imagine 2030 process. The BPDA's goals for the South Station Master Plan are to coordinate major public and private planning and development and prepare a comprehensive, long-range plan for land use, multimodal transportation, urban design, and the public realm. While the SSX project conceptual plans are being developed prior to the completion of the City's master planning process, MassDOT is collaborating with the City to ensure that the SSX project will be consistent with Imagine 2030 and the City's South Station Master Plan.

Land use impacts associated with the project at South Station include:

- The acquisition of the USPS property (approximately 14 acres) will convert the use of the site from USPS mail distribution to an expanded public transportation facility and will be consistent with existing zoning (potential impacts associated with the relocation of the USPS GMF facility are discussed in Section 3.19 and Appendix B – *Indirect and Cumulative Impacts Analysis*);

- The acquisition of a parcel located adjacent to 245 Summer Street (approximately 0.2 acres) will convert the parcel from a private patio area to a public right-of-way as part of conversion of Dorchester Avenue and will be consistent with the existing zoning; and

- The reopening of Dorchester Avenue (currently part of the USPS property) to a public right-of-way (approximately 5.0 acres) will convert the use from predominantly private use for USPS only to a multimodal public right-of-way and will be consistent with existing zoning.

Layover Facilities

Locating layover facilities at the Widett Circle site would be consistent with current zoning. A storage yard accessory to a railroad operation is an allowed use within the I-2 District, provided that the yard is located at least 150 feet from every residential use. The nearest residential land use is located more than 700 feet from the Widett Circle site boundary and no residential projects are under construction or proposed within 150 feet of Widett Circle. Land use impacts associated with the project at Widett Circle include acquisition of the Cold Storage and New Boston Food Market properties (approximately 25.1 acres); acquisition of a portion of Department of Public Works/City of Boston property (approximately 0.1 acres) to accommodate work at Broad Interlocking; and acquisition of Foodmart Road and Widett Circle (approximately 6.2 acres).

Locating layover facilities at Readville – Yard 2 would maintain the existing industrial use and would be consistent with current zoning. An accessory railroad storage yard is an allowable use within the LI-1 subdistrict. Proposed activities within the Neponset River Riverfront Protection Overlay District may entail compliance with special site design requirements. Land use impacts associated with the project at Readville – Yard 2 include the potential acquisition of a portion of the James G. Grant Co. LLC property (approximately 0.7 acres).

3.12.3. Mitigation

Any required property acquisitions would be carried out in a manner that would minimize impacts, as described further in this section. Acquisition would be limited to the minimum footprints required to support each function, including access roads, stormwater management facilities, and employee parking areas, where required. All property acquisitions and relocations would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, 42 United States Code (U.S.C.) 4601; CFR 49 Part 24 and/or M.G.L. 79; M.G.L. 79A through the MBTA's real estate acquisition team. The preferred goal of MassDOT/MBTA is to reach agreements with owners for the purchase of

properties required for the SSX project. Property owners would be offered just compensation based on fair market value established by a certified appraiser.

3.13. Socioeconomic

FRA's *Procedures for Considering Environmental Impacts* requires consideration of the potential impacts of the project on the socioeconomic environment, including the number and kinds of available jobs, the potential for demographic shifts, impacts of commerce, including existing business districts, metropolitan areas, and the immediate area of the alternative. For the socioeconomic assessment, the Project Team:

- Defined study areas as the 2010 U.S. Census blocks within a one-half-mile radius surrounding the existing South Station headhouse and a one-quarter mile radius of the two layover facility sites;
- Compiled a socioeconomic profile of each study area;
- Described the economic effects of the project components; and
- Identified the range of mitigation measures.

CTPS provided existing, No Build, and Build Alternatives estimates of population and employment for the South Station study area. CTPS used the Transportation Economic Development Impact System (TREDIS) model to estimate the economic impacts of permanent household population gains and employment gains due to the Build Alternative at the South Station site. These estimates were then used to estimate increases in business sales, gross regional product, jobs, and wage income for the Boston MPO region. CTPS also used the TREDIS model to estimate the economic impacts of the project's construction for the MPO region, as well as travelers' cost savings. DEIR Appendix 4 (Part 1), *Socioeconomic Conditions Technical Report,*[44] presents additional information and the results from the CTPS economic analysis.

3.13.1. Existing Conditions

Boston is the 10th largest metropolitan area and ninth largest national economy. Boston is a hub for finance, higher education, medicine, a broad range of professional services, and government activities at all levels. Healthcare comprises the largest sector of the Boston economy, followed by professional/ scientific/technical services, finance/insurance, and government. Boston is also an important tourist destination, as the tenth most visited city in the U.S.[45]

Boston's economy and employment has steadily expanded since 2010, and this growth is projected to continue. Since 2009, Boston's economy has grown at a rate of 4.8%, the highest among all major U.S. metropolitan areas.[46] In the South Station study area, employment in 2035 is expected to increase, with the largest increases occurring in the South Boston Waterfront/Innovation District. Boston has more jobs than residents and far more jobs than resident workers.[47] In the heart of the Downtown area, jobs outnumber residents by roughly seven to one. Commuters from outside the City fill 62% of its jobs. Although the total

[44] Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report, Appendix 4 (Part 1), Socioeconomic Conditions Technical Report.* October 2014. http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

[45] Traveler's Digest. *The 10 Most Visited Cities in the United States by Foreign Travelers (2013)*. August 30, 2013. http://www.travelersdigest.com/7528-10-most-visited-cities-in-the-united-states-by-foreign-travelers-in-2013/

[46] The Brookings Institution, "The 10 Traits of Globally Fluent Metro Areas: Boston," 2013.

[47] BRA (now BPDA). *Boston by the Numbers: Economy and Jobs*. March 2011. Accessed July 1, 2014, http://www.bostonredevelopmentauthority.org/getattachment/946803b2-6f1c-40b2-8b6b-c01c8c4bced1/; CTPS; U.S. Census data, 2000 and 2010

number of jobs has fluctuated with expansions and recessions, the trend is toward economic expansion, particularly in recent years.

Boston's population has also been growing in recent decades, and its growth compares favorably to most other northeastern cities. Over a two-year span culminating in July 2012, Boston grew 3.1% from the 2010 census to 636,479 people, at a rate faster than the suburbs and any urban area northeast of New Jersey.[48]

South Station

The South Station study area population and employment for existing conditions (2009) and 2035 No Build and Build Alternatives, as well as projections for travel demand forecasting, were based upon five transportation analysis zones (TAZs) within the one-half-mile South Station study area.[49] The 2009 estimated population in the TAZs around South Station totaled 13,190 people and the 2009 estimated jobs in the TAZs around South Station totaled 91,410. The population and employment estimates for these TAZs are consistent with the Boston Region MPO RTP.

In 2010, the City of Boston designated a portion of the South Boston Waterfront as the Innovation District, comprised of one thousand acres directly east of South Station across Fort Point Channel. In the South Boston Waterfront neighborhood, more than 4,000 jobs have been created since 2010 at more than 200 small businesses.[50, 51]

According to the 2010 Census, the one-half-mile South Station study area experienced an increase in housing by 67% between 2000 and 2010 to 6,444 housing units. This population/housing expansion is expected to continue, particularly in the South Boston Waterfront/Innovation District.

Located in the heart of Boston's Financial District, South Station is surrounded by a number of businesses and large employers[52], such as Fidelity Investments; Tufts Medical Center; Suffolk University; Gillette, the City's largest industrial/manufacturing employer; and General Electric Co., who recently announced they will be moving their headquarters directly across Fort Point Channel. Current staffing to support railroad operations at South Station (both on-site and off-site) for Amtrak and the MBTA is estimated to be close to 900 personnel, of which at least 20% are housed at South Station. In addition, the South Station headhouse features 15 eateries and 15 retail stores/services geared toward rail patrons. The headhouse includes retail space (CVS Pharmacy) on the second level and office space for Amtrak, the Massachusetts Division of Public Utilities, and approximately five private companies. The bus terminal also houses eateries and retail outlets/services/kiosks.

Layover Facilities

Both layover facility sites are located within existing industrial areas. The population within the one-half-mile Widett Circle study area generally is concentrated in the South End neighborhood, located west of the Widett Circle layover facility site; and to a lesser extent, in the eastern portion of the study area in South

[48] Boston Globe, *Boston's Population Boom Speeds Up.* June 16, 2013. Accessed July 23, 2014, http://www.bostonglobe.com/ideas/2013/06/16/boston-population-boom-speeds/WUb5OlqaNWj9gKDhtqXIkI/story.html?s_campaign=sm_tw.

[49] A transportation analysis zone or TAZ is the unit of geography most commonly used in conventional transportation planning models.

[50] *The Northeast Corridor and the American Economy*. April 2014.

[51] City of Boston, Boston Redevelopment Authority. *Innovation Boston.* Accessed September 12, 2016, http://www.bostonredevelopmentauthority.org/business-dev/initiatives/innovationboston/overview.

[52] BPDA (formerly BRA) defines large employers as private employers employing over 500 people.

Boston. Readville – Yard 2 is located in the Hyde Park neighborhood, with the one-half-mile study area population located primarily south and northwest of the layover facility site.

Table 3-19 — Population Trends, Layover Facility Study Areas, 2000-2010

Area	Population 2000	Population 2010	% Change 2000 to 2010
Widett Circle Study Area[a]	7,405	11,299	52.6
South Boston	31,005	33,311	7.4
South End	21,911	24,577	12.2
Readville – Yard 2 Study Area	5,615	5,111	-9.0
Hyde Park	30,076	30,637	1.9
City of Boston	589,141	617,594	4.8
Suffolk County	689,807	722,023	4.6
Massachusetts	6,349,097	6,547,629	3.1

Sources: 2010 Census, Summary File 1, Boston Redevelopment Authority Research Division Analysis; 2010 Census
a The Widett Circle study area includes the Suffolk County House of Correction, which had 1,512 residents in 2010.

As shown in Table 3-19, from 2000 to 2010, the Widett Circle study area grew in population by 53%, substantially more than any other study area or neighborhood. With the exception of the Readville – Yard 2 study area, which lost population from 2000 to 2010, the growth rate of the study area populations exceeded the city, county or state growth rates over the same time period.[53]

The Widett Circle site includes a complex of food-related storage and processing businesses. The site is comprised primarily of three privately-owned parcels on two public roads, Widett Circle and Foodmart Road. The parcel at 100 Widett Circle is referred to as the Cold Storage parcel. Cold Storage currently contains a temperature-controlled food storage and distribution facility, owned by Art Mortgage Borrower Propco 2006 2 LP, and operated by Americold/Crocker & Winsor Seafoods. The two parcels on Foodmart Road contain the New Boston Food Market Development Corporation, which consists of approximately 30 units leased to multiple businesses in the food processing, food storage, and food logistics industry. Created as an Urban Renewal Corporation, the property is tax-exempt under M.G.L. Chapter 121A (760 CMR 25).

A privately owned demolition and debris management company is located east of the existing Readville – Yard 2, proximate to a larger industrial district in the immediate Hyde Park area.

3.13.2. Environmental Consequences

No Build Alternative

South Station

As detailed in DEIR Appendix 4, *Socioeconomic Conditions Technical Report*,[54] in 2035, population within the South Station TAZs is anticipated to increase by 160%, increasing to approximately 34,260 people from existing conditions. This total includes the SSAR development. The largest increases would occur within the South Boston Waterfront/Innovation District, where population is anticipated to increase 212%, to 17,230 people.

[53] Boston Redevelopment Authority Research Division Analysis. *2010 Census-Summary File 1.* November 2011. http://www.bostonredevelopmentauthority.org/getattachment/9cdc8bc3-7224-4af1-9ce8-a9fe79ec0ad6

[54] Massachusetts Department of Transportation, South Station Expansion Project. *Draft Environmental Impact Report, Appendix 4 (Part 1) - Socioeconomic Conditions Technical Report*. October 2014. http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

In 2009, employment in the South Station TAZs totaled 91,410 workers. In 2035, employment is estimated to increase 20% to approximately 109,540 workers. The South Boston Waterfront/Innovation District would experience a 74% increase for a total of approximately 26,000 jobs.

In the No Build Alternative, employment would be unchanged at the South Station site. The total employment within the South Station headhouse, excluding bus terminal employees, is approximately 640 personnel, including employees for railroad operations of Amtrak and the MBTA, 100 retail/service employees, and 360 office employees on the upper floors. The USPS facility would continue to employ approximately 1,000 workers at South Station.

Layover Facilities

In the No Build Alternative, employment would be unchanged at the layover facility sites. There would be no impact to Widett Circle's food-related storage and processing businesses, or the demolition and debris management company located east of the MBTA's existing Readville – Yard 2 facility.

Build Alternative

South Station

The station expansion onto the site of the existing USPS facility site would displace approximately 1,000 USPS jobs. It is anticipated that these jobs would be relocated to a site within South Boston and there would be no net loss of USPS jobs within the Boston area (additional information regarding the relocation of the USPS GMF facility is in Section 3.19 and Appendix B – *Indirect and Cumulative Impacts Analysis*). MassDOT intends to replicate the USPS retail functions currently operating at the facility within the expanded South Station headhouse.

The station expansion in the Build Alternative is anticipated to more than double the retail and building management/cleaning staff within the headhouse. Assuming the South Station rail and building management staff would expand, this could yield a total of approximately 844 employees based at the South Station headhouse, an increase of roughly 200 employees. The station expansion also is anticipated to result in an increase in rail-related employment. Based on discussions with the MBTA, increases in staff for railroad operations could be 30%.

In addition to the direct employment changes associated with the Build Alternative, the SSX project would support continued economic growth and expansion of the Downtown Financial District and adjoining South Boston Waterfront/Innovation District. Given the importance of Boston as an employment center reliant on a commuter workforce, the proposed station improvements would be important to support the City's continued growth and economic health. An improved South Station transportation complex would provide enhanced transportation improvements to the adjoining Innovation District and other neighboring districts (Financial District, Leather District, and Chinatown) for businesses and residents.

Population and household numbers for the South Station TAZs are not expected to change from the No Build Alternative to the Build Alternative.

While the loss of 1,000 USPS jobs at the site would be partially offset by the increase in rail-related and retail jobs associated with the South Station Terminal expansion, a net decrease of approximately 500 total jobs is anticipated in the Build Alternative as comparted to the No Build Alternative. However, the lost jobs are represented by USPS jobs that are expected to be relocated to another location in Boston.

Layover Facilities

Direct business displacements required for the project would occur at the Widett Circle layover facility site, due to the required acquisition of the Cold Storage and New Boston Food Market properties. MassDOT and the City of Boston would coordinate with these businesses to find relocation options in the Boston area.

MassDOT would also potentially require a partial taking of approximately 0.7 acres of the adjacent James G. Grant Co. LLC property to complete the expansion of the MBTA's Readville – Yard 2 facility.

3.13.3. Mitigation Measures

MassDOT would provide acquisition and, if required, relocation assistance for affected property owners at the Widett Circle and Readville – Yard 2 layover facility sites in accordance with the procedures outlined in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. The Act provides benefits and protection for persons or businesses whose real property is acquired or who are displaced by federally funded projects, and require just compensation. Relocation assistance would be provided to affected owners. It is anticipated that suitable relocation sites are available within the industrial sites in the immediate South Boston area for the displaced Widett Circle businesses.

3.14. Environmental Justice

The federal regulations and guidance documents applicable to environmental justice issues include: Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations; U.S. Civil Rights Act Title VI; U.S. DOT Order 5610.2(a), Actions to Address Environmental Justice in Minority Populations and Low Income Populations; and FTA Circulars 4702.1A Title VI and Title VI-Dependent Guidelines for FTA Recipients, and 4301.1 Environmental Justice Policy Guidance for Federal Transit Administration Recipients.

Title VI prohibits discrimination on the basis of race, color, or national origin. Guiding EJ principles followed by U.S. DOT include avoiding, minimizing, or mitigating disproportionately high and adverse human health and environmental effects on minority and low-income populations; and ensuring the full and fair participation by all potentially affected communities in the transportation decision-making process. The federal definition of low-income is based on the federal poverty level, and a minority is defined to include persons who are American Indian and Alaska Native, Asian, Black or African American, Hispanic or Latino, and Native Hawaiian and other Pacific Islander.

The effects of the project alternatives were evaluated relative to their effects on all populations in order to determine whether impacts in the No Build and Build conditions would be disproportionate or adverse on EJ communities or populations. For the purposes of the SSX analysis, the state definition for an EJ population was used as outlined in the Massachusetts Executive Office of Environmental Affairs[55] Environmental Justice Policy, October 9, 2002 and Environmental Justice maps. EJ populations are defined as those segments of the population that EEA has determined to be most at risk of being unaware of or unable to participate in environmental decision-making or to gain access to environmental resources. The Commonwealth of Massachusetts requirements provide an expanded definition of EJ populations, to include persons who are foreign born or are not proficient in the English language, and have higher thresholds for low income. EJ is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement

[55] Now the EEA.

of environmental laws, regulations, and policies. An EJ community is defined as a neighborhood (consisting of a U.S. Census Bureau census block group) that meets one or more of the following criteria:

- The median annual household income is at or below 65.49% of the statewide median income ($62,133) for Massachusetts ($40,673 in 2010);
- 25% of the residents are minority;
- 25% of the residents are foreign born; or
- 25% of the residents have limited English proficiency (LEP), defined as households in which no one aged 14 and over speaks English only or speaks English "very well."

Throughout the project, MassDOT targeted outreach to EJ communities and provided accommodations for disadvantaged populations, as further described in Chapter 5, *Public Involvement and Agency Coordination*. SSX project public outreach has included a variety of methods to reach and involve members of the public and EJ communities, as summarized below.

The Project Team has prepared a Public Involvement Plan for the SSX project that outlines the public outreach program, and MassDOT has, and would continue to, implement the public outreach specified in the plan. MassDOT maintains a SSX project website, which is used to disseminate information and includes the project brochure translated into Chinese, Spanish, and Portuguese, the three most commonly spoken languages in Massachusetts for limited English proficiency populations in the 2010 census. The brochure also includes a TTY number for the hearing impaired. Project website materials are accessible for use by screen readers (for the visually impaired). The project website states that project materials posted on the website can be translated or alternative formats (such as large print) made available upon request, and a web link for such requests is provided.

MassDOT sends regular email updates, including when significant documents are uploaded to the SSX project website and public meetings are scheduled, to an extensive database that includes 2,500 groups and individuals and nearly 1,000 abutters. Email notifications include contacts for requests for access accommodations or interpreter services. A TTY number for the hearing impaired is also included. This interpreter information in the notification is translated into Chinese (both traditional and simplified characters), Spanish, and Portuguese.

Two open houses were held in November 2012 at Atlantic Wharf, 290 Congress Street, a block from South Station, to kick off the SSX project. These open houses were widely advertised and noticed. One meeting was held in the morning and the other meeting was held in the late afternoon/early evening to accommodate individuals with different schedules. Meeting notices were sent via e-mail to the SSX project database. Flyers advertising the open houses were distributed to abutters door-to-door in the Leather District, Chinatown, and South Boston (along Fort Point Channel). Signs advertising the events were displayed at South Station, and copies of the meeting flyer were available at the station's information desk. Meeting advertisements included a display ad posted in the Chinese newspaper, SamPan, in Chinese.

A MEPA scoping session on the ENF was held at South Station on April 1, 2013. The meeting was noticed in newspaper advertisements, including SamPan, and e-mail notifications were sent out. Signs advertising the MEPA scoping session were displayed in South Station, and a Chinese interpreter attended the meeting. Interpreter services were made available for future meetings upon request.

MassDOT periodically conducts information sessions about the project. To date, there have been five information sessions at South Station and an additional session at the Farmer's Market in Dewey Square. These sessions are advertised through e-mail notifications to the project database. At an information session in September 2013, a sign language interpreter was provided upon request.

MassDOT has provided briefings to neighborhood organizations, local institutions, and businesses. Meetings were held with local community organizations in EJ neighborhoods. For neighborhood organizations alone, there have been eleven briefings on the project to date. Project briefings were held with a number of civic and community organizations, including Chinatown Coalition, Chinatown Safety Committee, Leather District Neighborhood Association, Friends of Fort Point Channel, Allston Civic Association, and Andrews Square Civic Association. MassDOT's public informational materials and notices have included an offer to hold project briefings upon request.

MassDOT has conducted two online surveys in English, Chinese, and Spanish on the SSX project to gauge public preferences and obtain public input into the station design and planning process. The first survey was conducted during the fall of 2013 to gather feedback on current and future amenities at South Station. Nearly 800 people responded to this survey. The second survey opened in May 2014 and focused on gathering information on pedestrian and bicycling in the South Station/Dewey Square area. Print versions of the surveys were made available upon request. The surveys were promoted via the following: the project website, e-mail notifications to the project database, information sessions at South Station, the large display screens at South Station, printed bookmarks distributed at the South Station information desk, other organizations' mailing lists, and the MassDOT blog.

MassDOT has commissioned a task force for the I-90 project to examine replacement of the highway viaduct on the north/northeast side of BPY that carries I-90 south of Soldiers Field Road and over the railroad (on the east side). One of the principal purposes of the I-90 project is to present and review MassDOT's plans for the portion of the BPY that it owns or has a right-of-way to operate on. As the layover facility site screening advances, outreach to EJ communities would continue for future public meetings and project briefings at and around South Station, and would expand as needed to include other prospective layover facility sites.

3.14.1. Existing Conditions

The racial and ethnic composition of the City of Boston has changed dramatically over the last several decades, from a city that was predominantly white in 1980 (70%) to a majority-minority city (47% white) in 2010. The City of Boston is one of the most diverse cities in the nation and has one of the highest percentages of foreign-born populations (approximately 27%) in the U.S.[56] Boston also has the highest concentration of "affordable" subsidized housing among major U.S. cities. Approximately 20% of the City's housing is dedicated to low- and moderate-income families.[57] Table 3-20 presents the percentages of environmental justice populations within the one-half-mile study areas of the SSX project sites. Population estimates in this table are based only on the census blocks located entirely or partially within the one-half-mile study area. Table 3-21 presents race and ethnicity characteristics of the SSX project areas in comparison to the City of Boston, Suffolk County, and Massachusetts.

[56] Boston Redevelopment Authority. *Demographic and Socio-economic Trends in Boston: What we've learned from the latest Census data*. November 29, 2011. Accessed June 15, 2014. http://www.bostonredevelopmentauthority.org/getattachment/83972a7a-c454-4aac-b3eb-02e1fddd71e3/.

[57] Boston Redevelopment Authority. *Boston by the Numbers: Housing*. November 2013. Accessed July 1, 2014. http://www.bostonredevelopmentauthority.org/getattachment/76bd9781-55ee-4545-928c-706d571523a3/.

Table 3-20 — Percentages by Population and Area of SSX Project Study Areas Meeting Criteria to be Defined as an Environmental Justice Population

Study Area	Minority		Low Income		Limited English Proficiency		Meets All EJ Criteria		EJ Community Totals	
	Population %	Area %	Population %	Area %	Population %	Area %	Population %	Area %	Population %	Area %
South Station	78.1	36.0	51.7	17.5	43.0	15.5	43.0	15.5	84.9	36.0
Widett Circle	81.1	46.3	42.1	34.8	27.7	11.4	27.7	11.4	88.3	65.8
Readville – Yard 2	97.2	84.7	0	0	0	4.4	0	0	97.2	84.7

Sources: Massachusetts Office of Geographic Information (MassGIS), U.S. Census Bureau

Table 3-21 — Race and Ethnicity Characteristics in SSX Project Study Areas, 2010

Study Area	White	%	Minority	%	Black	%	Asian	%	Hispanic	%	Other	%
South Station	7,305	57.7	5,354	42.4	463	3.7	4,013	31.7	602	4.8	276	2.2
Widett Circle	5,288	46.8	6,011	53.2	1,958	17.3	1,298	11.5	2,468	21.9	287	2.5
Readville – Yard 2	2,375	46.5	2,736	53.5	1,476	28.9	103	2.0	982	19.2	175	3.4
City of Boston	290,312	47.0	327,282	53.1	138,073	22.4	54,846	8.9	107,917	17.5	26,446	4.3
Suffolk County	346,979	48.1	375,044	51.9	142,980	19.8	58,963	8.2	143,455	19.8	29,646	4.1
Massachusetts	4,984,800	76.1	1,562,829	23.9	391,693	6.0	347,495	5.3	627,654	9.6	195,987	3.0

Sources: 2010 U.S. Census; Boston Redevelopment Authority, U.S. Census – Summary File 1 Data, 2010

a Racial and ethnic categories are further defined as follows: White (White alone, not Hispanic or Latino); Black (Black or African American alone, not Hispanic or Latino); Asian (Asian alone, not Hispanic or Latino); Hispanic (Hispanic or Latino; persons of Hispanic origin may be of any race); Other (American Indian and Alaska Native alone, not Hispanic or Latino; Native Hawaiian and other Pacific Islander alone, not Hispanic or Latino; some other race alone, not Hispanic or Latino; two or more races alone, not Hispanic or Latino).

South Station

According to the 2010 U.S. Census, the total population of the one-half-mile study area around South Station is 12,659, with 6,444 households. EJ communities cover 36% of the study area and contain 85% of the total population (10,571 persons). The designated EJ blocks are located primarily west of the Central Artery (I-93) and the Surface Road. The racial and ethnic composition of the South Station study area (Asian population of 32%) reflects the Chinatown population. Most of the areas to the north in Downtown and to the east in South Boston Waterfront, consisting of commercial high-rises and buildings or industrial/transportation uses, are largely unpopulated. The South Station EJ study area and adjoining neighborhoods generally had a smaller percentage of non-whites in 2010 than the City and county, but a higher percentage than the state as a whole.

Layover Facilities

According to the 2010 U.S. Census, the total population of the one-half-mile study area around the Widett Circle layover facility site is 11,299, with 4,797 households. EJ communities cover 66% of the study area and contain 88% of the total population (9,973 persons). This area is west of the Southeast Expressway (I-93) and east of the MBTA Red Line. Transportation and industrial uses occupy most of the largely unpopulated area surrounding the project site between these two transportation routes. The most populous block group, which also has the second highest percentage of minorities (82%), includes the Suffolk County

House of Correction, which influences the EJ population percentages.[58] Other EJ block groups with elevated minority populations include the Boston University Medical campus. The minority population percentages in the Widett Circle layover facility study area are similar to that of the City and county, but are higher than that for the state.

The total population of the one-half-mile study area at the Readville – Yard 2 layover facility site is 5,111, with 2,128 households. EJ communities cover 85% of the study area and contain 97% of the total population (4,967 persons). The percentage of the black population is higher (29%) than that of the City, county, and state, while the Asian population is lower (2%).

3.14.2. Environmental Consequences

No Build Alternative

In the No Build Alternative, there would be no changes in accessibility and mobility for EJ and disabled populations; no direct impacts due to relocations and other indirect property impacts; and no change in indirect impacts due to visual, air quality, and noise impacts.

Build Alternative

The proposed station improvements would benefit EJ populations that use the station by providing improved transportation facilities and additional areas of open space, including the new Harborwalk on Dorchester Avenue.

The Boston MPO and CTPS assessed the regional accessibility changes within the TAZs covering nearly all of Eastern Massachusetts as a result of the SSX project using the Boston MPO's regional travel demand model. This analysis compared accessibility for environmental justice/disabled populations and non-disadvantaged populations, including access to employment opportunities, hospitals, and higher education destinations located within a 40-minute transit trip and a 20-minute automobile trip.

This assessment determined that accessibility to needed services (hospitals and colleges) and jobs (basic, retail, and services), mobility and congestion, or environmental impacts would not be permanently impaired as a result of the project. Furthermore, changes would be negligible for both EJ and non-disadvantaged population zones in the Build Alternative as compared to the No Build Alternative. CTPS determined that none of the EJ populations, including low-income, minority, LEP, or disabled populations, would experience a greater burden than any non-EJ population resulting from the SSX project Build Alternative. In fact, the project is expected to benefit EJ populations by improving accessibility to public transportation. An improved station design would also improve public access within the station.

The proposed South Station improvements would not directly displace any EJ populations, as no residential property takings would occur. The acquisition of the USPS facility would result in the relocation of all employees to another site in Boston. The number of employees at the USPS facility meeting EJ criteria is not known. Assuming that the percentage of workers that represent EJ populations is similar to the statistics for the City of Boston, roughly half (or 500) of USPS workers could represent EJ populations.

The SSX project would result in only a temporary loss of the on-site USPS retail functions as a community service since MassDOT anticipates that there would be the ability to replace the retail mail functions within the terminal expansion. There are two other USPS post offices within close proximity (a five- to 10-minute

[58] The Suffolk County House of Correction (South Bay) accounts for 62% of the block group population. MassGIS eliminates from EJ designation those block groups with 65% or more of their total population living in group (institutional) house. At 62%, the Suffolk County House of Correction (South Bay) is included in the MassGIS count of EJ communities.

walk from South Station) that could be utilized during construction. Therefore, no disproportionate impacts on EJ populations are anticipated to occur as a result of the USPS relocation.

SSX project-related property displacements would occur at Widett Circle, with the displacement of approximately 30 private businesses. The number of employees at these businesses meeting EJ criteria is not known. Assuming that the percentage of workers that represent EJ populations is similar to the statistics for the City of Boston, roughly half of the workforce could represent EJ populations. MassDOT and the City of Boston would coordinate with these businesses to find relocation options in the Boston area.

Increases in rail operations and associated increases in noise at the Readville – Yard 2 site would adversely impact nearby residences, including EJ communities. The midday peak activity noise level at Readville – Yard 2 would impact residences located along Wolcott Street and Riley Road. A noise barrier is proposed to mitigate adverse impacts.

No disproportionately high and adverse human health and environmental effects, including air quality, visual, social, and economic effects, are anticipated to occur to EJ populations due to the SSX project. Steps would be taken at the Readville – Yard 2 site to reduce any noise and/or vibration levels that may affect all populations. Section 3.3, *Noise and Vibration*, provides additional information.

3.14.3. Mitigation Measures

No EJ-related mitigation would be required or proposed at the South Station or layover facility sites.

3.15. Public Health and Safety

The following section addresses passenger safety concerns at the station as well as hazardous materials research. The following federal, state, and local regulations and guidance provide the regulatory context for the public health and safety analysis:

- FTA's *Safety and Security Management Guidance for Major Capital Projects*, FTA C 5800.1, August 1, 2007;
- *The Manual for Development of System Safety Program Plans for Commuter Railroads*, prepared by the American Public Transportation Association (APTA) in cooperation with FRA, dated May 15, 2006, which provides guidance for development of a System Safety Program Plan (SPPP) for commuter railroads for project contracts;
- *NFPA Standard for Fixed Guideway Transit and Passenger Rail Systems* (NFPA 130);
- FTA's *State Safety Oversight Program* (49 CFR 659.19 - *System Safety Program Plan*);
- FRA proposed rulemaking that would require commuter and intercity passenger railroads to develop and implement a system safety program to improve the safety of their operations;[59] and
- *MBTA South Station Community Emergency Management Plan and Evacuation Protocol*, March 31, 2010.

[59] "System Safety Program, A Proposed Rule by the Federal Railroad Administration, 9/7/2012, https://www.federalregister.gov/articles/2012/09/07/2012-20999/system-safety-program.

For the public health and safety assessment at the project sites, the Project Team:

- Assessed existing pedestrian safety and LOS at South Station; and
- Designed all facilities in accordance with applicable regulations, including Amtrak, MBTA, FRA, APTA, American Railway Engineering and Maintenance-of-Way Association (AREMA), ADA, NFPA, Massachusetts State Building Code, Massachusetts Fire Prevention, and MAAB regulations.

Site contamination and hazardous materials in Massachusetts are regulated through multiple federal and state regulations. The applicable regulations for asbestos-containing materials (ACM) are the U.S. EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP)[60] and the Massachusetts Air Pollution Control Regulations.[61] MassDEP implements the Massachusetts Contingency Plan (MCP) to address releases or threats of releases of oil and/or hazardous material (OHM) into the environment.[62]

The study area for the evaluation of site contamination, including soil and groundwater contamination, and hazardous materials is defined as the site boundary where permanent or temporary construction is likely to take place.

Phase I Environmental Site Assessments (ESAs) were conducted for the South Station site (with the exception of the USPS property, which was not available to be investigated) and the Widett Circle and Readville – Yard 2 layover facility sites. A Phase 1 ESA is a report that summarizes a site visit and records review of a property and its surrounding area to determine if any additional environmental investigation is warranted to understand the liability risks associated with the identified property. The goal of these assessments was to identify Recognized Environmental Conditions (RECs) and Historical Recognized Environmental Conditions (HRECs) associated with the properties.

3.15.1. Existing Conditions

South Station

The existing passenger waiting area and circulation zone at South Station is inadequately sized and configured to accommodate the current daily demand. The existing station lacks adequately sized platforms and passenger circulation areas. The station can be accessed from the east via Atlantic Avenue, the north via Dewey Square/Summer Street, and the east via Dorchester Avenue. The USPS and the railyard inhibit any station access from the south. Currently the station is policed by the City of Boston, MBTA, and Amtrak and emergency response is regulated by each agency. The MBTA is in the process of developing a composite Emergency Response Plan for South Station in conjunction with the SSAR project.

The South Station site has a history of coal storage and has been used as a railyard since the late 1800s. The Phase I ESA completed in January 2016[63] identified three RECs and six HRECs at the site. The RECs include historical use of the site as a railroad transportation facility. The historical fill present at the site has been documented as containing elevated concentrations of polynuclear aromatic hydrocarbons (PAH) and metals. A release of hydraulic oil has also been documented at the site. A Class A-3 Response Action

[60] 40 CFR Part 61.

[61] 310 CMR 7.15.

[62] Per the Massachusetts Contingency Plan (310 CMR 40.0000), a release is defined as any spilling, leaking, pumping, pouring, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, excluding certain emissions or applications of pesticides, fertilizer, or residuals.

[63] South Station Expansion. *Final Environmental Impact Report* June 2016. http://www.massdot.state.ma.us/southstationexpansion/Documents/FEIR.aspx

Outcome (RAO) for the hydraulic oil release was submitted for the approximately 980 square foot disposal site area, which is located within the South Station Bus Terminal on Atlantic Avenue near Beach Street, asserting that remedial work has been completed and a level of "no significant risk" was achieved. Contamination has not been reduced to background levels and an Activity and Use Limitation (AUL) has been implemented for this disposal area. AULs are legal restrictions used in the context of the Massachusetts Contingency Plan to limit future exposure to contaminants remaining at a site.

Layover Facilities

The Widett Circle site was created by the filling of South Bay, which was completed approximately 1967. Two RECs and seven HRECs were identified during the completion of the Phase I ESA. The RECs included the fill material used during the creation of the land area and the surrounding property's use as a railroad storage and maintenance facility. The seven HRECs identified included a 100-gallon release of diesel fuel and six releases of anhydrous ammonia, all of which were closed in accordance with MassDEP regulations.

The Readville – Yard 2 site has been used as a railyard since approximately 1917. The Phase I ESA completed in January 2016 identified four RECs and zero HRECs for the site. The first two RECs are associated with Release Tracking Number (RTN) 3-15991, and include impact of onsite soils with PCBs, asbestos, heavy metals, and petroleum compounds and impacts of PCBs, heavy metals, asbestos, and petroleum compounds the adjacent property owned by James G. Grant Co, Inc. (the Grant property). The remaining RECs include stained soils in the area of the fire pump building and historical use of the site as a railroad storage and maintenance facility. An AUL has been recorded for the Grant property under RTN 3-15991.

Based on the RECs identified, a Phase II ESA would be conducted in accordance with the applicable regulations at each layover facility to determine the potential impact to future development caused by the identified RECs.

3.15.2. Environmental Consequences

No Build Alternative

In the No Build Alternative, the safety and security conditions would remain the same at South Station. The passenger circulation deficiencies of the existing passenger waiting area and circulation zones would remain. The anticipated increase in ridership would further exacerbate the deficiencies and could present a safety concern due to inhibited passenger flow. Currently, there is only one means of egress from the platform, and it is through the trackhead. Existing platform widths are 17 feet and six inches wide. Amtrak's and the MBTA's commuter rail future service plan will add approximately 35,000 passengers per day by 2035 to the already congested station.

Build Alternative

South Station

The project would improve rail safety, passenger safety within the station areas, and traffic safety. The proposed station expansion would reduce congestion by providing adequate space and appropriate facilities to safely and conveniently manage the projected peak-hour pedestrian flows. MassDOT established an overall goal of LOS C to accommodate passenger circulation and waiting areas. The design would meet this requirement with adequate platform, walkway, stairway, and waiting area sizing.

In order to comply with the *NFPA Standard for Fixed Guideway Transit and Passenger Rail Systems* (NFPA 130) egress capacity and travel distance requirements, all existing and new platforms would require at least three points of egress. As shown on Figures 2-3 and 2-4, the trackhead at the northern terminus of the platforms would provide one egress point, while the other points would be served by stairs for emergency egress connecting to the track level at the southern terminus of each platform and a vertical means of egress composed of stairs and/or escalators connecting to an elevated concourse or egress bridge. As shown in Figure 2-4, the overhead concourse and egress bridge would span all platforms and provide a means of passage between the platform level and a defined point of safety. The width of this egress bridge and elevated concourse would be designed to handle passenger loads from all of the platforms that it would serve.

The station design would eliminate nooks, recesses, and "places to hide," wherever possible to minimize surveillance problems. Sufficient lighting would be provided in stairs, ramps, the pedestrian overpass, elevator areas, and exits, so that the failure of any one unit will not leave any area dark or endanger persons leaving the platform. The design would also provide open areas with long sight lines to eliminate all dark or obscure areas.

The project would provide for increased capacity for curbside drop-off and pick-up, by reopening Dorchester Avenue for curbside activity and bus operations. Use of Dorchester Avenue would reduce curbside traffic on Atlantic Avenue and would provide improved safer accommodations for pedestrian and bicycle activities on Dorchester Avenue.

The SSX project would require the acquisition and demolition of the USPS facility. Prior to construction, further investigation would be required to identify the presence, location, and quantity of suspect ACM and potential hazardous materials, including sampling and analysis of materials. Should the additional investigation identify issues, they will be conducted in accordance with the applicable regulations. MassDOT would consult with the MassDEP regarding the planning and implementation of demolition and management of contaminated materials to ensure consistency with applicable regulations, and provide adequate protection to workers and sensitive receptors. Response actions could be required, including development of a site-specific health and safety plan. Should any SSX project activities occur within the area of the AUL, or other impacted areas identified as part of the Phase 2 ESA where conditions are above regulatory criteria at the South Station Bus Terminal, MassDEP would require oversight by a Licensed Site Professional (LSP) during excavation or handling of contaminated soils in compliance with a Soil Management Plan.

A Phase II is a comprehensive site assessment during which the risks posed to public health, welfare, and the environment are determined. Based on the RECs identified, Phase II ESA activities would be conducted in accordance with the applicable regulations. This would determine the potential impact to future development caused by the identified RECs. In addition, Phase I and II ESAs would be conducted in accordance with the applicable regulations when the USPS site is available to be investigated.

Layover Facilities

Based on the compliance status of historic releases at the Widett Circle site, no likely residual contamination exists and significant issues associated with the historic releases would not be anticipated during project layover facility construction. Based on RECs identified, Phase II ESAs would be conducted at Widett Circle and Readville – Yard 2. The project would require demolition of multiple existing facilities at Widett Circle. Prior to demolition activities, further investigation would be required to identify ACM and potential hazardous materials. Response actions could be required, including development of a site-specific health and safety plan.

Based on the historic and current use of Readville – Yard 2, it is likely that some contamination would be encountered during SSX project layover facility construction. Construction activities at Readville – Yard 2 could also include remediation of the disposal site (RTN 3-15991) (contaminants include PCBs, petroleum compounds, asbestos, and metals), to reach a Permanent Solution.

3.15.3. Construction Requirements and Mitigation Measures

The MBTA *South Station Community Emergency Management Plan and Evacuation Protocol*, March 31, 2010, would be incorporated and referenced, as appropriate, in the preparation of safety plans, protocols, and procedures, as described in this section, and will be updated as appropriate to incorporate the proposed station facilities.

A Safety and Security Program would be developed for the SSX project governing the implementation of safety and security requirements during the planning, construction, and site operation. To that end, a Safety and Security Program Plan (SSPP) would be prepared outlining the safety and security resources, policies, practices and procedures for South Station and the layover facility sites.

A System Safety Certification Program for the South Station and the layover facility sites will be developed to verify compliance with applicable safety requirements. MassDOT will coordinate proposed safety and security programs/measures with Amtrak, the railroad operator, law enforcement agencies, emergency responders, and the City of Boston.

A Preliminary Hazard Analysis (PHA) would be performed of South Station and the layover facility sites to systematically assess conditions associated with the expansion of the station, its ancillary infrastructure, and the development of the new layover facilities, which could affect the safe subsequent operation of the station facilities and rail system. A Threat and Vulnerability Assessment (TVA) would be performed for South Station and the layover facilities using U.S. Department of Homeland Security and Transportation Security Agency methodologies and processes for Critical Asset Protection.

A Preliminary Safety and Security Design Criteria Manual would be developed to prescribe those safety and security requirements in addition to those required by codes, standards, and guidelines, which will be incorporated into the project design. MassDOT will coordinate proposed safety and security programs/measures with FRA, Amtrak, law enforcement agencies, emergency responders, and the City of Boston.

Construction Period Mitigation

A program will be developed for the SSX project to implement safety and security requirements during the construction phase. The construction plans will be developed to comply with all applicable federal, state, and local laws and regulations, including requirements of Occupational Safety and Health Administration (OSHA), FRA, U.S. EPA, MBTA, MassDEP, and, as applicable, the State Fire Marshall and/or local fire departments.

Draft Site Specific Health and Safety Plans (HASPs), as provided in FEIR Appendix C,[64] have been prepared outlining the safety and security resources, policies, practices and procedures for South Station and the layover facilities. Final HASPs will be required to be prepared by each construction contractor to meet all applicable OSHA and U.S. EPA requirements. The contractor's HASP will include procedures for site inspections/audits, safety briefings/meetings, employee training, incident investigation/reporting. The

[64] South Station Expansion. *Final Environmental Impact Report, Appendix C – Site Specific Health and Safety Plan*. June 2016. http://www.massdot.state.ma.us/southstationexpansion/Documents/FEIR.aspx

plan will incorporate requirements for designated safety supervisor/contacts, emergency contact list, first aid facilities, protective equipment, housekeeping, and protection of public safety.

Based on RECs identified, Phase II ESAs would be conducted at South Station, Widett Circle and Readville – Yard 2. MassDOT would implement a soil and groundwater sampling and analysis program to provide information to establish the presence and extent of contaminated material; determine options available to manage and dispose of surplus soil generated during construction; establish requirements for existing groundwater or soil contamination in design for construction; and meet the performance standards of 310 CMR 40.0000 with regard to construction in contaminated areas. Based on the Phase II investigation results, MassDOT would determine if Massachusetts Contingency Plan (MCP) reportable conditions exist. Potential effects of construction on existing areas of environmental contamination and conditions that may pose a significant risk to human health, safety, public welfare, or the environment, including Imminent Hazards and/or Critical Exposure Pathways, would be identified. MassDOT would develop recommendations for specific response actions to maintain compliance with the MCP related to OHM on the property. MassDOT would identify response actions to be conducted prior to construction.

MassDOT would conduct a visual inspection of buildings to be demolished to identify the presence, location, and quantity of suspect ACM and other regulated materials. Work plans would be developed for sampling based on the facility walk-throughs once the inspections are complete. Bulk samples of potential hazardous materials would be collected for laboratory analysis. Once the laboratory results are received, types, conditions, and quantities of potential hazardous materials and universal wastes would be documented and inventoried. Finally, response actions that would be required prior to demolition would be identified.

3.16. Parks and Recreation Areas

Section 4(f) of the U.S. Department of Transportation Act (U.S. DOT Act) provides protection for publicly owned parks, recreation areas, wildlife and waterfowl refuges, and historic properties or archaeological sites on or eligible for listing on the National Register of Historic Places. Section 4(f) stipulates that U.S. DOT agencies cannot approve the transportation use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless the following conditions apply:

- There is no feasible and prudent avoidance alternative to the use of land; and the action includes all possible planning to minimize harm to the property resulting from such use; or
- The agency determines that the use of the property will have a de minimis impact.

The following steps were taken to complete the analysis of parks and recreational areas:

- Identified potential parkland resources in the immediate vicinity and within one-half-mile of South Station, and within one-quarter mile of the proposed layover facilities;
- Conducted an assessment of the project's impacts upon non-site specific activities and non-activity-specific sites; and
- Performed a Section 4(f) evaluation (see Chapter 4).

This section discusses the parks and recreation areas, Section 3.17 discusses the historic resources, and Chapter 4 – *Draft Section 4(f) Determination* presents the evaluation of the parks and historic resources protected under Section 4(f), addresses potential impacts of the SSX project on these resources, and describes plans to minimize harm.

3.16.1. Existing Conditions

South Station

The South Station study area includes a number of parks and publicly owned squares created as mitigation by the Central Artery/Tunnel (CA/T) project, including: Dewey Square Plaza, directly north of South Station on Summer Street and Atlantic Avenue, the adjoining Dewey Square Parks within the Rose Kennedy Greenway, and sections of the Harborwalk.

The Rose Kennedy Greenway encompasses 15 acres extending 1.5 miles from Chinatown to the North End along the Surface Road between Atlantic Avenue and Purchase Street. Owned by MassDOT and operated by the non-profit Rose Kennedy Greenway Conservancy, the Greenway's public gardens, promenades, and plazas received over 1.19 million visitors in 2015[65] to events such as festivals and concerts. Dewey Square Plaza hosts a seasonal farmer's market and daily food trucks.

To the south, the South Station site adjoins Rolling Bridge Park, a plaza and green space owned and maintained by MassDOT as part of CA/T project mitigation. Completed sections of the Harborwalk border the South Station site to the north and south. The Fort Point Channel Harborwalk extends northeast of the South Station site at the Federal Reserve Bank and south of the existing USPS facility at Rolling Bridge Park. The Harborwalk provides waterfront access to the public, with amenities such as cafes, seating, and parking areas. Portions of the Harborwalk (on the east side of Fort Point Channel) also accommodate the South Bay Harbor Trail, which extends 3.5 miles from the Ruggles MBTA Station to Fan Pier.

Layover Facilities

The closest recreation area, park, or playground is at least 500 feet from the Widett Circle site. The study area includes the Union Park Street Playground (a city park), and the South Bay Harbor Bicycle Trail.

The Massachusetts Department of Conservation and Recreation (MassDCR) Neponset River Reservation adjoins the northeast corner of the Readville – Yard 2 site. The Fowl Meadow and Ponkapoag Bog Area of Critical Environmental Concern (ACEC) is located within the southern half of the study area, approximately 600 feet south of the layover facility site. Nearby publicly owned parks include MassDCR Moynihan Playground and two City parks, Iaccona/Readville Playground and Jeremiah Hurley Memorial Park. The Neponset River Greenway Corridor, also called the Neponset Extension bicycle trail, is an existing/proposed trail that follows the Neponset River and, in the study area, follows Truman Highway. When completed, it will stretch 15 miles from the Blue Hills to Boston Harbor, with connections planned to the Readville area and the Dedham Rail Trail.

3.16.2. Environmental Consequences

No Build Alternative

In the No Build Alternative there would be no impacts to parks and recreational areas. The Harborwalk would not be extended through Dorchester Avenue, and public pedestrian and bicycle access to the waterfront in this location would remain prohibited. Access to Rolling Bridge Park would remain limited.

[65] Rose Kennedy Greenway Conservancy. *Website viewed on September 7, 2016.* http://www.rosekennedygreenway.org

Build Alternative

South Station

The SSX project will not adversely impact any park and/or recreational sites. The conversion of Dorchester Avenue from a private road to a public right-of-way will provide significant benefits and recreational opportunities for the area. The roadway reconstruction will include a cycle track connecting two planned City of Boston bicycle infrastructure projects. In addition, the Harborwalk extension will complete one of the final links missing in the Downtown portion of the Harborwalk facility. Finally, the reopening of Dorchester Avenue will increase access and exposure to Rolling Bridge Park and will also increase public access to the Fort Point Channel.

Layover Facilities

No impacts to recreational areas are anticipated in the vicinity of the Widett Circle or Readville – Yard 2 sites.

3.16.3. Mitigation Measures

No mitigation related to parks and recreational areas is required or proposed at the South Station or layover facility sites.

3.17. Cultural Resources

This section presents an evaluation of the impact of the SSX project on historic architectural and archaeological resources in accordance with Section 106 of the National Historic Preservation Act as amended the Advisory Council on Historic Preservation's implementing regulations for Section 106 (36 CFR 800), and State Register Review procedures (950 CMR 71.00). Additional standards and guidance included *Public Planning and Environmental Review: Archaeology and Historic Preservation* (MHC 1985), and National Park Service's *Recovery of Scientific, Prehistoric, Historic, and Archaeological Data* (36 CFR Part 66 Appendix A).

Section 106 consultation among FRA and MassDOT, the MHC, Boston Landmarks Commission (BLC), and other interested parties consisted of the following:

- The establishment of the Areas of Potential Effects (APEs), defined as "the geographic area within which the undertaking may cause changes in the character of or use of historic properties if any such properties exist;"[66]
- The identification and evaluation of historic properties[67] within the APEs; and
- A determination of whether or not the project would have an adverse effect upon historic properties within the APEs.

[66] 36 CFR 800.16(d)

[67] An historic property is defined in 36 CFR 800.16(1) as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior."

Agency correspondence is provided in Appendix D. APEs were established for the three project sites (South Station, and the Widett Circle and Readville – Yard 2 layover facilities, as defined in Chapter 2) based on the potential of the SSX project to directly or indirectly affect aboveground historic properties, such as historic districts, buildings, objects, and structures, or belowground historic properties, consisting of archaeological sites. DEIR Appendix 13 – *Historic Architectural Resources Technical Report*[68] contains descriptions of the historic properties identified within the APEs. Following its review of the technical report, MHC concurred with the APEs and the identification of historic properties for the SSX project.[69]

3.17.1. Existing Conditions

South Station

Table 3-22 and Figures 3-10, 3-11, and 3-12 present the architectural properties within the SSX APE, their current historic designation, and determinations regarding NR eligibility.

There are no recorded archaeological sites within, and no archaeological sensitivity is assigned to, the South Station APE. The Project Team performed a Phase I Archaeological Reconnaissance Survey Technical Report (dated January 2014) that provided an archaeological sensitivity assessment for the project. The Project Team conducted the assessment under State Archaeologist's Permit Number 3397 issued on June 18, 2013. In a letter to FRA dated August 13, 2013, MHC concurred with the identification and evaluation findings presented in this report, which concluded that no recorded archaeological sites or sites of archaeological sensitivity were identified in the APE at the SSX project sites due to the filling and disturbances that have historically occurred at these urbanized sites.[70] In that letter, MHC concurred with the results of the archaeological reconnaissance survey that the majority of the project parcels possess low archaeological sensitivity and recommended no further archaeological survey for the project parcels.

[68] South Station Expansion, *Draft Environmental Impact Report, Appendix 13 (Part 1) – Phase I Archaeological Reconnaissance Technical Report.* October 2014.
South Station Expansion, *Draft Environmental Impact Report, Appendix 13 (Part 2) – Historic Architectural Resources Technical Report*. October 2014.

[69] Brona Simon, State Historic Preservation Officer, Massachusetts Historical Commission, *South Station Expansion Project, Summer Street & Atlantic Avenue, Boston (Downtown), MA; MHC #RC.53253. EEA No. 15028,* Correspondence to U.S. Department of Transportation, Federal Railroad Administration, August 13, 2014.

[70] Further information is presented in South Station Expansion Project, Draft Environmental Impact Report, Appendix 13 (Part 1), P*hase I Archaeological Reconnaissance Survey Technical Report*, October 2014.

Table 3-22 — Historic Resources within the SSX Areas of Potential Effects

Name	Historic Designation/Recommendation
SOUTH STATION APE	
Properties listed in the National and/or State Registers of Historic Places	
Fort Point Channel Historic District	Listed in National and State Registers
Leather District	Listed in National and State Registers
Russia Wharf Buildings	Listed in National and State Registers
South Station Headhouse	Listed in National and State Registers
Commercial Palace Historic District	Determined National Register Eligible by the Keeper of the Register Listed in State Register
Fort Point Channel Landmark District	Listed in State Register (Boston Landmark District)
Properties included in the Inventory of Historic and Archaeological Assets of the Commonwealth	
Chester Guild, Hide and Leather Machine Company	Determined National Register Eligible [a]
Chinatown District	Determined National Register Eligible [a]
Federal Reserve Bank of Boston	Determined National Register Eligible [a]
Kneeland Street Steam Heating Plant	Determined National Register Eligible [a]
South End Industrial Area	Determined National Register Eligible [a]
Keystone Building	Not evaluated – To be evaluated when building is 50 years old
Weld Building	Determined National Register Eligible [a]
USPS GMF/South Postal Annex	Determined Not National Register Eligible [a]
MBTA Operations Center Power Substation	Not evaluated – To be evaluated when building is 50 years old
245 Summer Street	Not evaluated – To be evaluated when building is 50 years old
Properties Not Previously Surveyed	
Gillette	Determined National Register Eligible [a]
READVILLE – YARD 2 APE	
Properties included in the Inventory of Historic and Archaeological Assets of the Commonwealth	
Readville Industrial Survey Area – Standard Oil Company Depot Complex	Determined Not National Register Eligible [a]
Readville Industrial Survey Area – Frank Kunkel & Son Hammered Forgings	Determined Not National Register Eligible [a]

[a] Consensus Determination of Eligibility between FRA and MHC
Source: South Station Expansion Project, *Historic Architectural Resources Technical Report*, March 2016 UPDATE.

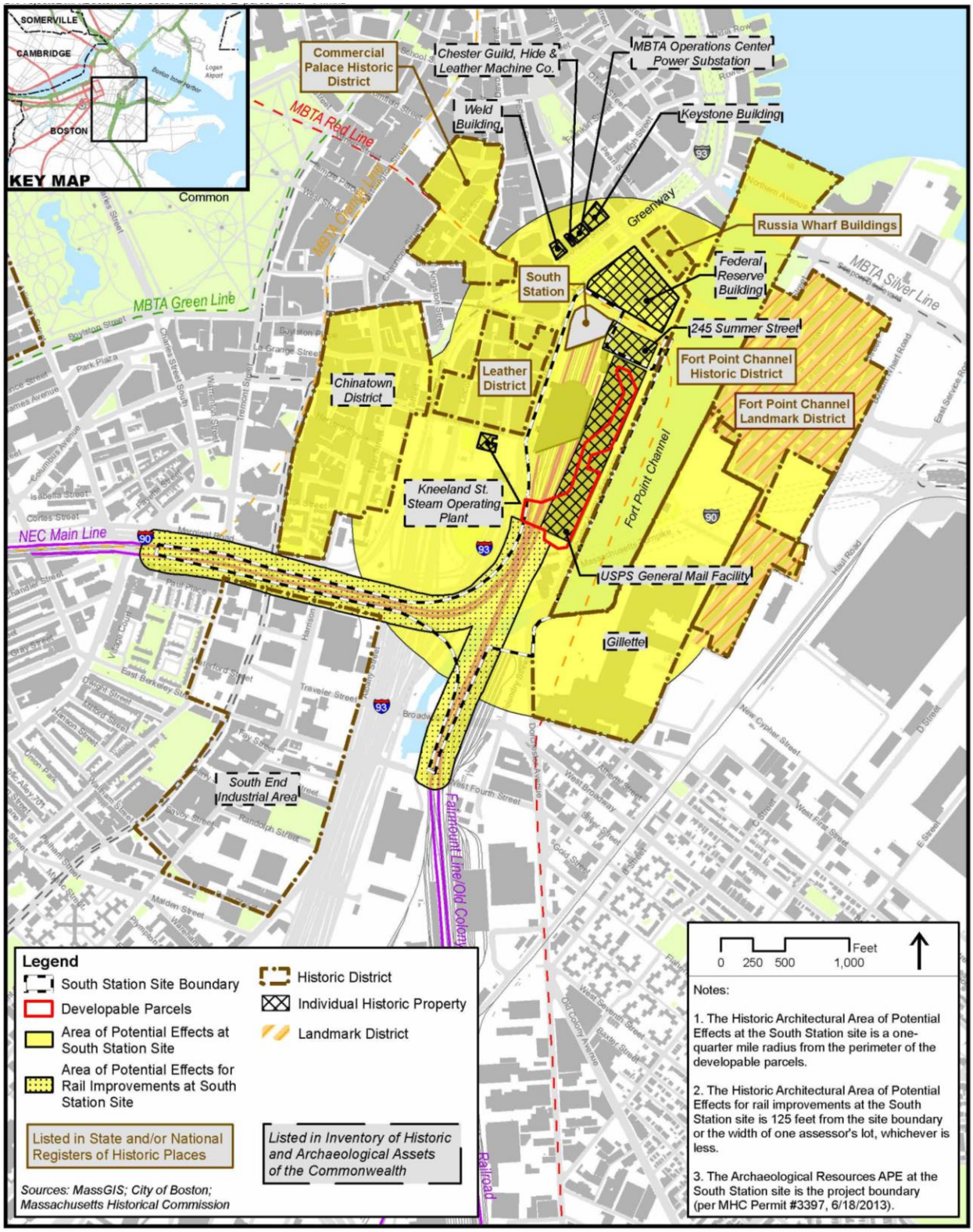

Figure 3-10 — South Station Historic Architectural Area of Potential Effects

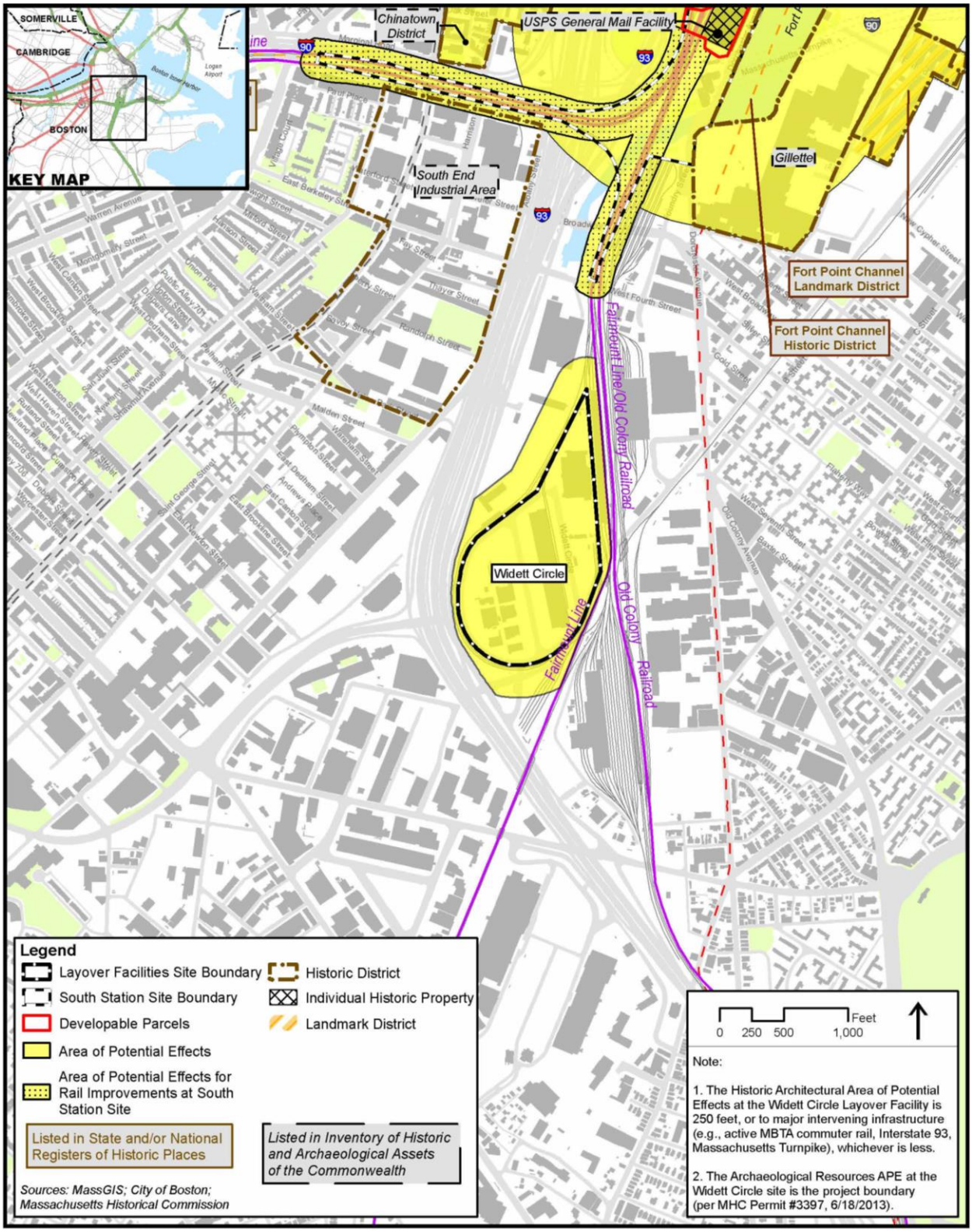

Figure 3-11 — Widett Circle Layover Facility Historic Architectural Area of Potential Effects

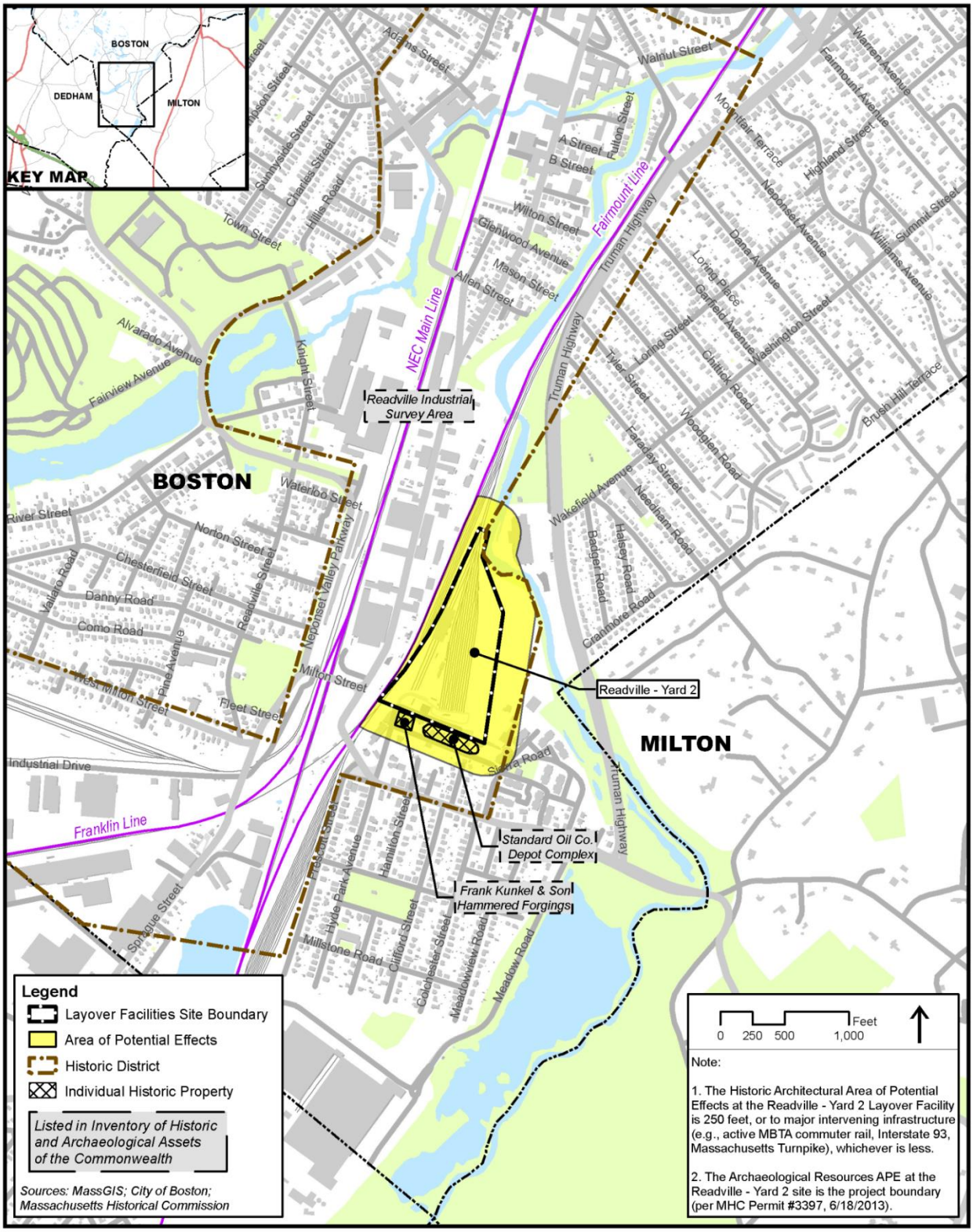

Figure 3-12 — Readville – Yard 2 Layover Facility Historic Architectural Area of Potential Effects

Layover Facilities

The identification and evaluation of historic properties concluded that there are no historic buildings or structures listed or eligible for inclusion in the National or State Register of Historic Places within the Widett Circle and Readville – Yard 2 layover facility sites. No archaeological sensitivity is assigned to either layover facility site.

3.17.2. Environmental Consequences

No Build Alternative

The No Build Alternative would have no visual impact on historic properties within the South Station, Widett Circle, or Readville – Yard 2 APEs. Noise and vibration from the No Build Alternative would be similar to the existing conditions.

Build Alternative

South Station

MassDOT assessed potential project impacts to historic properties within and in the vicinity of the South Station site relative to demolition activity, noise, vibration, visual, and historic rehabilitation impacts to historic properties as described below. At South Station, the project, implemented with noise mitigation and designed consistent with the Secretary of the Interior's Standards (SOI) for Rehabilitation. The new construction will be designed consistent with the SOI Standard 10 and guidelines for new construction: "New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment."[71]

Neither direct alteration nor temporary construction impacts to the South Station headhouse are anticipated as a result of the project. The USPS facility, which is located within the South Station APE would be demolished; however, FRA determined and MHC concurred that this property is not eligible for listing on the NR.

A moderate noise increase is expected east of the South Station Rail Terminal, including the National and State listed Fort Point Channel Historic District, due to the removal of the USPS facility along Dorchester Avenue. As mitigation, a noise barrier would be installed along the easternmost track on the Dorchester Avenue side of the station to minimize or eliminate adverse noise impacts to properties to the west of the station, including the Fort Point Channel Historic District. Train activity at South Station is not expected to result in any ground-borne noise inside the building.

The west side of Fort Point Channel along Dorchester Avenue adjacent to the USPS facility is not currently accessible to the public. The completion of the Harborwalk along Dorchester Avenue would allow public access and views within the Fort Point Channel Historic District across Fort Point Channel that are currently not available to the public.

[71] The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines for Rehabilitating Historic Buildings. U.S. Department of the Interior, National Park Service, Heritage Preservation Services, Washington, DC. 1992.

The project would have no adverse visual effect on views to or from historic properties within the South Station APE because the physical improvements of the station expansion would be consistent with the scale of the existing South Station headhouse. In addition, the aforementioned SOI guidelines for new construction will be followed.

The Fort Point Channel east and west seawalls are contributing structures to the Fort Point Channel Historic District. The SSX project includes raising an approximately 700-foot section of the east seawall along Dorchester Avenue by 1.5 feet to match the elevation of the adjacent east seawall to the north and south. MassDOT's proposal to raise the seawall is in response to recent projections of sea level rise of nearly two feet by the year 2050 and is necessary to help mitigate potential future flooding on the South Station site. The historic character of the seawall would be retained and preserved and the material, size, and configuration of the new 1.5-foot course of granite block would match the existing seawall. The seawall improvements would not introduce any elements that are out of character with the Fort Point Channel Historic District and would be designed to be consistent with the SOI Standards for Rehabilitation.

Layover Facilities

New construction at the two layover facility sites would include minimal vertical components; consequently, FRA does not anticipate noise, vibration, and visual impacts to historic properties within the APE. No recorded archaeological sites or archaeologically sensitive areas where undocumented sites would be expected were identified for the layover facility APEs. FRA does not anticipate the SSX project construction activities to have potential impacts on significant archaeological resources. No further archaeological investigations are recommended for the layover facility APEs.

3.17.3. Determination of Effect

FRA and MassDOT applied the Section 106 and MHC effect criteria (36 CFR 800.5 and 950 CMR 71.07(2)(b)) to determine if the project would have "no effect," "no adverse effect," or an "adverse effect" on historic properties located within the APE.

FRA determined that the SSX project would have a Conditional **No Adverse Effect** on historic properties, provided the following conditions are implemented during project design and construction:

- Implementation of a CMP/Noise Control Plan, including BMPs for noise and vibration control;
- Construction of a noise barrier at South Station;
- Rehabilitation of the Fort Point Channel seawall along Dorchester Avenue, consistent with the Secretary of the Interior's Standards for Rehabilitation; and
- MHC and consulting parties review of 30% and 60% design plans.

The SHPO, the MHC, concurred with FRA's finding and proposed conditions in a letter dated May 9, 2017. Because impacts to archaeological resources are unlikely, no mitigation measures related to archaeological resources are proposed. To address the possibility of encountering previously undocumented archaeological resources during construction, an unanticipated discoveries plan would be prepared prior to construction.

3.18. Construction Period Impacts

This section describes the project's anticipated construction period impacts on rail services, transit, and pedestrians, and discusses construction sequencing and schedule.

3.18.1. Environmental Consequences

No Build Alternative

No construction related to the SSX project would take place in the No Build Alternative; therefore, there would be no construction period impacts.

Build Alternative

Air Quality

As detailed in DEIR Sections 6.3.1, Air Quality Impacts, and 6.4.2, Emissions Control Plan, temporary air quality impacts could result from construction activities associated with the project, including fugitive dust emissions, direct emissions from construction equipment, and increased emissions from motor vehicles on local streets due to traffic disruption. Fuel combustion would also cause GHG emissions. The anticipated temporary construction activity does not appear to be exceptional or atypical for this type of project. Due to the close proximity of construction activities to nearby businesses and other public areas, however, mitigation measures during construction would be required. The CMP would include an emissions control plan to address impacts of fugitive dust, construction equipment and vehicle exhaust, and any additional dust control considerations. The details of specific mitigation measures are included in the DEIR.[72]

Water Resources

The contractor would be required to implement Soil Erosion and Sediment Control measures prior to beginning construction, and maintain and/or replace these measures throughout construction as required by the controlling agency. These requirements are defined in section 767, Mulching, Seed for Erosion Control in MassDOT's *Supplemental Specifications to the 1988 English Standard Specifications for Highways and Bridges*, dated July 1, 2015. Additionally, the contractor would be required to follow the provisions set forth by the BWSC Stormwater Permit, and the MWRA 8(m) Permit. If groundwater is encountered during the construction activities, an MWRA Temporary Construction Site Dewatering Discharge Permit will be required pursuant to 360 CMR 10.091-10.094. Construction at all SSX project sites would require a NPDES Construction General Permit. The contractor would prepare a Stormwater Pollution Prevention Plan (SWPPP), as required by the NPDES Construction General Permit, that documents all of these efforts for construction prior to beginning any work. The SWPPP is to be approved by MassDOT and state and federal agencies prior to the commencement of work.

Noise and Vibration

The FTA construction noise criteria are based on an hourly Leq level of 90 dBA for residential receptors and 100 dBA for commercial/office receptors during daytime hours (7 a.m. and 10 p.m.), and 80 dBA for residential receptors during nighttime hours (10 p.m. to 7 a.m.). The City of Boston construction noise criteria are more stringent, and are based on the L10 noise metric (the noise level exceeded 10 percent of the time). The City of Boston L10 construction noise limits are 75 dBA for residential receptors and 80 dBA

[72] Massachusetts Department of Transportation, South Station Expansion Project, Draft Environmental Impact Report, Chapter 6 – *Construction*. October 2014. https://www.massdot.state.ma.us/southstationexpansion/Documents.aspx

for commercial/office receptors during daytime hours (7 a.m. to 6 p.m.), and measured baseline L10 + 5 dBA during evening and nighttime hours (6 p.m. to 7 a.m.). The results of the construction noise assessment are based on the more stringent City of Boston construction noise limits.

The results of the detailed construction noise assessment indicate that the highest construction noise levels in the South Station APE would occur during the demolition of the USPS facility and the construction of the headhouse. Because of the close proximity of the office building at 245 Summer Street to the construction activity, the construction noise levels at this location are expected to exceed the City of Boston construction noise limits during the demolition of the USPS facility, the construction of the headhouse, and the construction of the tracks and platforms. In addition to noise, vibration during the demolition of the USPS facility and the construction associated with the expansion of South Station is also a major concern at 245 Summer Street because of the vibration-sensitive computer equipment in the basement of the building. The construction noise levels at residential locations along Atlantic Avenue and the Fort Point Historic District are expected to exceed the City of Boston construction noise limit of 75 dBA if pile driving is required. Without pile driving, the construction noise levels at these residential locations would not exceed 75 dBA. If pile driving is required, the construction noise level would exceed the City of Boston construction noise limit of 80 dBA for commercial receptors such as the main South Station headhouse. Because of their distance from the demolition/construction activity at South Station, the residential locations along Atlantic Avenue and the Fort Point Historic District are not expected to exceed the FTA annoyance criterion of 72 VdB.

The construction noise levels for the Widett Circle layover facility would be below the City of Boston L10 construction noise limit of 75 dBA because of the distance (1,200 feet) to the nearest residential receptors along Albany Street from the Widett Circle construction activity. However, the construction noise levels at the Readville – Yard 2 layover facility would exceed the construction noise limit at the single-family residences along Wolcott Street and Wingate Road, and the apartment buildings on Riley Road and Sierra Road.

Based on the equipment anticipated to be used in the construction of the Widett Circle and Readville – Yard 2 layover facilities, vibration levels are expected to be below the building damage criterion of 100 VdB and the FTA human annoyance criterion of 72 VdB. At the Widett Circle layover facility, vibration levels during construction are expected to be below 50 VdB at the nearest sensitive receptors along Albany Street, and below 60 VdB at the nearest sensitive receptors at the Readville – Yard 2 layover facility.

Transportation

In the Build Alternative, construction activities would impact rail services, transit, and pedestrians. Any outages along the NEC would impact Amtrak operations and maintenance activities. Such outages could require overnight closures of South Station for Amtrak with use of Back Bay Station as a temporary replacement. Closures that would impact Amtrak's access to maintenance facilities would have to be planned in advance. Freight operations would not be impacted as freight operations are not in the construction vicinity. Construction associated with the South Station Bus Terminal connection would be coordinated to minimize any potential disruptions to bus service. Final construction staging/phasing would be determined as part of final design through discussions with MassDOT and project stakeholders.

Travel to and from the South Station project site for workers would be divided into on-site vehicles, off-site shuttles, and transit. For the South Station site, an analysis of the construction sequencing and the proposed work shows the total vehicles generated would average 280 single occupancy vehicles (SOVs) per work day. This was calculated by estimating the number of workers based on construction value for each major work element including track, layover, headhouse, and Dorchester Avenue construction and USPS

demolition. The project site can accommodate the projected necessary construction vehicles along Dorchester Avenue and areas outside of the building footprint during USPS demolition and South Station Terminal Expansion. Additional vehicles, if required, would be accommodated at offsite parking locations, where shuttles would be provided to minimize the construction-related traffic.

For the two layover sites, 205 vehicles at Widett Circle and 58 vehicles at Readville – Yard 2 are expected to be generated. Parking capacity is adequate at both locations; therefore, no additional shuttling would be required.

All three project construction areas can be fully enclosed without changes to existing pedestrian, bicycle and motor vehicle paths. Short term closures (typically a week or less) may occur for tie-in construction, and would require approved plans submitted by the contractor.

Land Use

Work at the layover facilities and within Dorchester Avenue and the USPS property could occur with minimal impact to abutting properties and railroad operations, subject to state, local and agency provisions.

Passenger use would not be affected during peak hours for the station. Disruptions would be largely minimized by completing utility connection work in non-public spaces, and utilizing non-revenue hours for public space connections. Once areas are no longer needed for construction activities, they would be returned to public use.

Public Health and Safety

The construction sites would be secured by fence enclosures that can also be closed completely during non-work hours. During work hours, workers on site would be required to carry proper identification and training cards. Visitors would be required to sign in at the construction entrance. Construction sites would maintain a security guard presence, as determined by state, local, and agency requirements.

Draft HASPs, as provided in FEIR Appendix C,[73] have been prepared outlining the safety and security resources, policies, practices, and procedures for South Station and the layover facilities. Final HASPs will be required to be prepared by each construction contractor to meet all applicable OSHA and U.S. EPA requirements. The contractor's HASP will include procedures for site inspections/audits, safety briefings/meetings, employee training, incident investigation/reporting. The plan will incorporate requirements for designated safety supervisor/contacts, emergency contact list, first aid facilities, protective equipment, housekeeping, and protection of public safety. During preliminary design, Hazardous Building Material Evaluations would be conducted at the SSX project sites to identify any recognized hazardous building materials, including lead-based paint, PCBs, universal wastes, and ACM. Response actions could be required prior to building demolition, including notifications to MassDEP and the Massachusetts Division of Occupational Safety (MassDOS). If asbestos, lead, or other hazardous/regulated materials are identified in any project buildings to be demolished, notification to the appropriate regulatory agency (U.S. EPA, MassDEP, or MassDOS) would be required. Construction activities at Readville – Yard 2 could require remediation activities in compliance with the MCP. Subsurface work in the proposed expansion areas would require the oversight of a LSP in conjunction with a Soil Management Plan.

[73] South Station Expansion. *Final Environmental Impact Report, Appendix C – Site Specific Health and Safety Plan*. June 2016. http://www.massdot.state.ma.us/southstationexpansion/Documents/FEIR.aspx

3.18.2. Mitigation Measures

Prior to the start of work, the SSX project contractors would develop a detailed CMP. The CMP would consist of a detailed plan to address construction period impacts to various environmental resources, and would address vehicular traffic, pedestrian and bicycle facilities, on-street parking, public access, emergency access to local businesses and residences, dust, noise, odor, rodents, and construction-related nuisance conditions. MassDOT would coordinate the development and review of the CMP with the City and emergency personnel to ensure that appropriate safety measures would be incorporated throughout construction.

Contract specifications would be developed to address potential sustainability and recycling initiatives, as well as requirements for monitoring and proper utilization of water in the construction process.

SSX project construction would also require the preparation of a Construction Waste Management Plan (CWMP). Solid waste would be generated as part of the SSX project, particularly related to demolition, excavation for utilities and foundations, and grading for Dorchester Avenue, the USPS GMF, station substructure components, and the layover facilities.

To mitigate construction noise, a temporary 18-foot high noise barrier would be installed between the construction site and the office building at 245 Summer Street. If pile driving is required during the construction of the headhouse, then a temporary noise barrier would be installed, or other noise mitigation measures would be implemented such as pre-auguring to reduce the amount of pile driving required, and selecting a pile driver with a smaller hammer and foot-pound force rating.

As with other major construction projects in the City of Boston, the contractor would be required to submit a CMP/Noise Control Plan to indicate the methods to mitigate construction noise levels, and to provide noise monitoring during construction to determine compliance with the City of Boston construction noise limits.

In addition to noise, vibration is also a major concern at 245 Summer Street, which has critical computer systems located in the basement of the building. Outdoor vibration measurements would be obtained at 245 Summer Street during construction to ensure that the vibration levels do not exceed the FTA vibration criterion of 65 VdB for buildings where low vibration levels are essential for interior operations. During pile driving activity, vibration levels would also be obtained inside the basement of 245 Summer Street to ensure that they do not exceed the specification limits of the computers.

3.18.3. Project Phasing and Schedule

Construction activities are generally categorized as rail, vertical construction, utility relocation and installation, and site and roadway development. The rail-related construction activities would be performed in close coordination with the operating railroads, including the MBTA and its commuter rail operator (Keolis), Amtrak, and CSX Transportation, Inc. (CSXT). Flagging (protection of trains and employees) and inspection services would be provided by the operating railroad for a given section of track. Other non-rail-related construction activities would be coordinated with the City of Boston, utility companies, and other public and private entities as appropriate. Staging/laydown locations are envisioned at Dorchester Avenue for South Station staging; within the limits of the Widett Circle site; and within the limits of the Readville – Yard 2 site.

The proposed construction sequencing would be as follows:

- Demolish the USPS facility;
- Reconstruct Dorchester Avenue and the Harborwalk;
- Construct South Station rail improvements (additional tracks and platforms, and reconstruct interlockings);
- Expand South Station Terminal; and
- Construct the rail layover facility sites.

To minimize impacts to rail services and passengers a construction phasing schedule would be utilized that balances and optimizes the duration and impact of overnight work windows, weekend work outages, and strategic track closures. As the project advances through preliminary design, MassDOT would coordinate with transportation providers and rail agencies to identify opportunities for strategic closures and alternatives for replacement services. MassDOT will also develop a communication plan for coordination with passengers, communities, and businesses potentially impacted by service disruptions. An example of a strategic track closure would be to shut down for a period of time the Old Colony Line coming into South Station and allow around-the-clock construction at South Station on tracks impacted by this route. Commuter rail passengers could be bused to South Station or transferred from the Old Colony Line at Braintree to the Red Line. This could allow the contractor an extended work window.

3.19. Indirect and Cumulative Impacts

Indirect impacts are defined as those impacts caused by an action that occur later in time or farther removed in distance, but are still reasonably foreseeable. Cumulative impacts are the effect on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such actions. MassDOT conducted an indirect and cumulative impacts analysis for the SSX project and the results from this analysis are presented in detail in a technical memorandum that is appended to this EA as *Appendix B – Indirect and Cumulative Impacts* is provided below. Included below is a summary of that analysis.

3.19.1. Indirect Impacts

South Station

There would be positive indirect impacts on social and economic conditions related to enhanced accessibility for residents, workers, and tourists within and beyond the Downtown Boston area. By accommodating improved rail service frequency and reliability, the SSX project would support continued economic development and job and population growth. The reopening of Dorchester Avenue would provide another key link between South Boston and the Financial District and would relieve traffic congestion along Atlantic Avenue, but is not expected to result in substantial negative indirect impacts, as the area is already urbanized and heavily travelled.

Layover Facilities

The areas adjacent to both layover facilities are largely urban areas that currently support industrial uses and rail operations facilities and are not anticipated to experience substantial negative impacts. It is anticipated that these businesses would relocate to currently developed sites or properties in area

neighborhoods. Readville – Yard 2 is an active MBTA layover facility and the expansion is not expected to result in significant indirect impacts.

United States Postal Service

The primary indirect impact of the SSX project would be the relocation of the USPS facility from Dorchester Avenue to a new location. For the purposes of this indirect assessment, it is assumed that the USPS could be relocated to a site in South Boston on the Reserved Channel in Boston's Seaport District that the USPS had previously identified as potentially being appropriate to accommodate a relocated USPS GMF. The actual relocation would be subject to negotiations between the USPS and MassDOT/the Commonwealth of Massachusetts. The eventual relocation of the USPS GMF to any site would be subject to all applicable federal, state and local permitting and environmental review processes should it move forward.

The SSX project assumes the relocation of the USPS GMF to a specific location in South Boston to perform potential impact analysis and also assumes the existing facilities and operations would continue unchanged. Portions of the program that were assumed to conduct the impact assessment could be conveyed on an alternate location:

- USPS GMF facility totals approximately 1.4 million sq ft;
- Approximately 1,000 total employees; and
- USPS GMF peak traffic times are: 6:00 AM – 7:00 AM (454 trips, including 100 USPS trucks) and 2:00 PM – 3:00 PM (389 trips, including 46 USPS trucks).

This analysis qualitatively discusses the potential impacts of the USPS GMF relocation to a site in South Boston on the Reserved Channel in Boston's Seaport District on traffic, the human environment, historic and archaeological resources, waterways and wetlands, floodplains, ecology, air quality, noise and vibration, and site contamination and hazardous materials. A summary of the analysis that is further detailed in Appendix B – *Indirect and Cumulative Impacts* below.

- **Traffic** – The relocation of the USPS facility would have a minor impact on the roadway network and would eliminate or substantially reduce the existing USPS trips that travel through the Financial District and the congested Dewey Square intersection at Atlantic Avenue and Summer Street.

- **Land Use** – Existing land use in the vicinity of the potential relocation site includes marine-based and general industrial and commercial uses. Recent development in the South Boston Waterfront/Innovation District has focused on mixed uses including residential, light industrial, office, and commercial projects. The potential relocation of the USPS GMF facility to this area would be compatible with the mixed uses and diverse types of industry in the area.

- **Environmental Justice** – There are only a small number of residences located in the vicinity of the potential USPS relocation site, and of those residences, none include EJ populations. No disproportionately high and adverse human health and environmental effects, including air quality, visual, social, and economic effects, are anticipated to impact EJ populations due to the relocation of the USPS GMF.

- **Visual** – The majority of the potential relocation site and the area surrounding the site are paved for surface parking and vehicle and materials storage. Therefore, no negative visual impacts are anticipated as a result of the potential USPS GMF relocation.

- **Historic and Archaeological** – A database review found that the potential USPS relocation site does not contain any archaeological sites that are listed in, or eligible to be listed in, the SR or the NR, and identified no historic properties within the project site.

- **Waterways and Wetlands** – The potential facility site is near, but not directly abutting, the Reserved Channel. Due to the distance from the potential site, no impacts to the surface waters of the channel are anticipated. The only WPA jurisdictional resource that would be affected at the site of the potential USPS relocation is LSCSF. There are no specific performance standards for LSCSF in the WPA; therefore, the potential USPS relocation site would meet all performance standards of the WPA.

- **Floodplains** – As indicated by FEMA Flood Insurance Rate Maps (FIRMs), a 100-year flood would inundate the northern portion of the potential relocation site via overland flooding from the Boston Inner Harbor main channel. A 500-year flood would further inundate the site via flood waters from the Reserved Channel. Results of the flood risks for Boston from a more detailed evaluation using the BH-FRM outputs published by MassDOT-FHWA[74] present a less severe outcome where minimal flood encroachment to portions of the north and northeastern areas of the relocation site would occur for both the 100-year and 500-year flood scenario.

- **Ecology** – There are no Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife present at the potential USPS relocation site and no federal or state endangered or threatened species are known to be present. No impacts to fisheries or other aquatic resources within the nearby Reserved Channel are anticipated.

- **Air Quality** – It is highly unlikely that emissions from the potential USPS relocation project would create a new violation of any of the National or Massachusetts Ambient Air Quality Standards; would increase the frequency or severity of any existing violations; or would delay the attainment of any National or Massachusetts Ambient Air Quality Standards. Construction-related activities could result in short-term impacts on ambient air quality.

- **Noise and Vibration** – No noise or vibration impact is expected from the operations at the potential new location for the USPS facility.

- **Site Contamination and Hazardous Materials** – Based on a database search, there are no instances of an historic release or threat of release into the environment within the boundaries of the Reserved Channel site.

3.19.2. Cumulative Impacts

The cumulative impact assessment considered both public transportation improvements and private developments. Public transportation improvements were identified through review of Amtrak Master Plans and state transportation plans. Private developments were identified from the BPDA's (formerly BRA) lists of reviews under Article 80. The complete listing of the projects considered can be found in Appendix B – *Indirect and Cumulative Impacts*.

[74] MassDOT-FHWA, *Pilot Project Report: Climate Change and Extreme Weather Vulnerability Assessments and Adaptation Options for the Central Artery*, June 2015.

With the SSX project, the proposed intercity and regional passenger rail improvements planned as part of FRA's NEC FUTURE program, as defined in Chapter 1, could be implemented, along with other south side commuter rail improvements planned by Amtrak/MBTA. The implementation of the SSX project would also support the projected total buildout of the South Boston Waterfront/Innovation District planned by the City of Boston. Both of these (NEC improvements and continuing development of the Boston Innovation District) represent substantial economic gains for the greater Northeast region, the City of Boston, and the nation as a whole. Beyond the South Boston waterfront, the projects with the largest potential cumulative land impacts include FRA's NEC FUTURE Program and the South Coast Rail projects. The South Coast Rail project involves restoring commuter rail service from South Station in Boston to the South Coast of Massachusetts. FRA is addressing impacts of their NEC FUTURE program through a tiered environmental review that includes preparation of a Tier 1 EIS. A FEIS/FEIR was prepared for South Coast Rail in August 2013.

The SSX project is critical to regional economic growth, as it supports both FRA's NEC FUTURE initiative and projected build-out occurring in the South Boston waterfront, the fastest growing urban area in the Commonwealth. The SSX project would improve Amtrak intercity passenger rail/MBTA commuter rail/transit ridership, reduce greenhouse gas emissions, and would not result in substantial impacts, beyond those associated with supporting the continued economic growth and expansion already occurring on the NEC and in the South Boston/Innovation District.

Chapter 4 – Section 4(f) Determination

4.1 Introduction

Section 4(f) of the U.S. DOT Act provides protection for publicly owned parks, recreation areas, wildlife and waterfowl refuges, and historic properties or archaeological sites on or eligible for listing on the National Register of Historic Places. This chapter presents the evaluation of the parks and historic resources protected under Section 4(f), addresses potential impacts of the SSX project on these resources, and describes plans to minimize harm. The following analysis demonstrates that the SSX project, implemented with noise mitigation and designed consistent with historic preservation design principles, would have no adverse effect on historic properties, and therefore would either involve no Section 4(f) use or, in the case of the Fort Point Channel seawall, a *de minimis* impact (as defined in Section 4.3 below).

4.2 Project Overview

The SSX project would expand South Station Rail Terminal capacity and related layover capacity to meet current and anticipated future (2035) high-speed, intercity, and commuter rail service needs. The project includes planning and preliminary engineering for the following components:

- Acquire and demolish the USPS Facility;
- Reopen Dorchester Avenue and extend the Harborwalk;
- Expand the South Station Terminal; and
- Construct rail layover facilities for storing midday trains at Widett Circle and existing Readville – Yard 2.[1]

Further description of the proposed action is presented in EA Chapter 1 and Chapter 2, while EA Figures 1-1, 1-2, 1-5, 2-3 through 2-6 depict the project site.

4.3 Section 4(f) Protections and Definitions

Under Section 4(f) of the U.S. DOT Act of 1966 (49 U.S.C. §303 and 23 U.S.C. §138), U.S. DOT and its modal administrations may approve the use of publicly owned parks, recreation areas, wildlife and waterfowl refuges, or historic sites, only if there is no feasible or practicable alternative to the use of the land and the project includes all possible means to minimize harm resulting from the use. FHWA's Section 4(f) regulations[2] define "use" to include:

- **Permanent Incorporation** into a transportation facility (either by purchase or easement acquisition);
- **Temporary Occupancy**, when there is temporary use of property that is adverse in terms of Section 4(f) preservationist purposes; and

[1] FRA has elected to follow FHWA Section 4(f) regulations codified at 23 CFR 774 et seq. for its Section 4(f) analysis, since FRA has not enacted Section 4(f) regulations.

[2] *Ibid.*

- **Constructive Use**, when the proximity impacts (including visual or noise impacts) are so great as to impair the qualities that qualify the property for protection.

A U.S. DOT agency may approve transportation projects if it determines that the use will involve a "*de minimis*" impact. A *de minimis* impact is one that, taking into account avoidance, minimization, and mitigation, results in no adverse effects to the activities, features, or attributes of a park, recreation area, or historic site that qualifies for Section 4(f) protection. A U.S. DOT agency may make a determination of *de minimis* impacts for a use of Section 4(f) property that is minor in nature, as long as the agency coordinates with the officials having jurisdiction over the Section 4(f) property and provides opportunities for public involvement.

For parks and recreation areas, a *de minimis* impact finding may be made for projects that will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f). In making this determination, the public must be afforded an opportunity to comment, and the officials with jurisdiction over the property have to concur in writing.

For historic sites, a *de minimis* impact finding may be made when the U.S. DOT agency has determined that no historic property will be affected by the project or that the project will have "no adverse effect" on historic properties. In making this determination, the views of any parties participating in the Section 106 consultation must be considered, and the State Historic Preservation Officer (SHPO) has to concur in writing.

4.4 Existing Conditions

4.4.1. Parks and Recreation Areas

Section 4(f) protects only those publicly owned and accessible areas whose primary purpose is parkland use or public recreation, and that are significant as designated by the officials with jurisdiction. Section 4(f) protection also extends to public walkways and trails that are privately owned but are made publicly accessible through a public easement, but not to walkways or bicycle paths that are part of a transportation facility right-of-way. For example, completed sections of the Harborwalk that border the South Station site to the east along the Fort Point Channel and the Federal Reserve Bank site (Table 4-1 and Figure 4-1), as well as the section on the east side of the Fort Point Channel, are protected under Section 4(f).

Table 4-1 and Figures 4-1 through Figures 4-3 identify parks and recreational areas potentially protected under Section 4(f) within one-quarter mile of the project sites.

Table 4-1 — Parks and Recreation Areas in the SSX Study Area

Map ID	Site Name	Facility Type	Ownership
SOUTH STATION			
1	Atlantic Avenue plantings	Malls, Squares, Plazas	State (MBTA)
2	Binford Street Park	Malls, Squares, Plazas	Private
3	Children's Museum Plaza	Malls, Squares, Plazas	Private
4	Children's Wharf Harborwalk	Malls, Squares, Plazas	Private
5	Children's Wharf Park	Parks, Playgrounds, Athletic Field	City
6	Dewey Square Plaza	Malls, Squares, Plazas	State (MassDOT)
7	Federal Reserve Bank Harborwalk	Malls, Squares, Plazas	Private
8	Fort Point Channel Harborwalk	Malls, Squares, Plazas	Private
9	I-90 Interchange	Malls, Squares, Plazas	State
10	Pagoda Park	Parks, Playgrounds, Athletic Field	State (MassDOT)
11	Rolling Bridge Park	Malls, Squares, Plazas	State (MassDOT)
12	Rose Fitzgerald Kennedy Greenway	Malls, Squares, Plazas	State (MassDOT)
13	Russia Wharf Harborwalk	Malls, Squares, Plazas	Private
14	South Bay Harbor Bicycle Trail	Bicycle Trail	Federal/State/ City/ Private
15	Tufts Wharf Harborwalk	Malls, Squares, Plazas	Private
WIDETT CIRCLE			
1	Union Park Street Playground	Parks, Playgrounds, Athletic Fields	City
2	South Bay Harbor Bicycle Trail	Bicycle Trail	Federal/State/ City/Private
READVILLE – YARD 2			
1	Blue Hills State Reservation	Parkways, Reservations, and Beaches	State
2	Iacona/Readville Playground	Parks, Playgrounds, Athletic Field	City
3	Jeremiah Hurley Memorial Park/Wolcott Square	Malls, Squares, and Plazas	City
4	Moynihan Playground	Parks, Playgrounds, Athletic Field	State
5	Neponset River Reservation	Parkways, Reservations, and Beaches	State (MassDCR)
6	Dedham Rail-Trail	Bicycle Trail	State
7	Readville to Neponset Rail-Trail	Bicycle Trail	Private
8	Neponset Extension Rail-Trail	Bicycle Trail	State

Note: Refer to Figure 4-1 (South Station), Figure 4-2 (Widett Circle), and Figure 4-3 (Readville – Yard 2) for numbered locations. Source: City of Boston Open Space Plan 2008-2014, MassGIS, MassDOT, MassDCR.

4.4.2 Wildlife and Waterfowl Refuges

Section 4(f) protection extends to wildlife and waterfowl refuges, however none exist in the vicinity of the project sites.

4.4.3 Historic and Archaeological Resources

Table 4-2 lists the individual properties and historic districts within the South Station APE. The locations of these historic resources are depicted on Figure 4-4.

The Readville – Yard 2 and Widett Circle APE do not contain historic properties listed, or eligible for listing, in the National or State Register of Historic Places.[3]

Section 4(f) protects archaeological resources that are significant for preservation in place. FRA and MassDOT (the Project Team) have not identified any recorded archaeological sites or sites of archaeological sensitivity in the APEs at the SSX project sites due to the filling and disturbances that have historically occurred at these urbanized sites.[4]

Table 4-2 — National Register Listed or Eligible Properties or Districts within the South Station Area of Potential Effect

Name	Historic Designation/Recommendation
SOUTH STATION	
Properties listed in the National and/or State Registers of Historic Places	
Fort Point Channel Historic District	Listed in National and State Registers
Leather District	Listed in National and State Registers
Russia Wharf Buildings	Listed in National and State Registers
South Station Headhouse	Listed in National and State Registers
Commercial Palace Historic District	Determined National Register Eligible Listed in State Register
Fort Point Channel Landmark District	Listed in State Register (Boston Landmark District)
Properties Determined Eligible for Listing in the National Register of Historic Places	
Chester Guild, Hide and Leather Machine Company	Determined National Register Eligible
Chinatown District	Determined National Register Eligible
Federal Reserve Bank of Boston	Determined National Register Eligible
Kneeland Street Steam Heating Plant	Determined National Register Eligible
South End Industrial Area	Determined National Register Eligible
Weld Building	Determined National Register Eligible
Gillette	Determined National Register Eligible

Source: South Station Expansion Project, *Historic Architectural Resources Technical Report*, March 2016 UPDATE.

[3] Further information is presented in South Station Expansion Project, *Historic Architectural Resources Technical Report*, March 2016 UPDATE.

[4] Further information is presented in South Station Expansion Project, *Draft Environmental Impact Report, Appendix 13 (Part 1), Phase I Archaeological Reconnaissance Survey Technical Report*, October 2014.

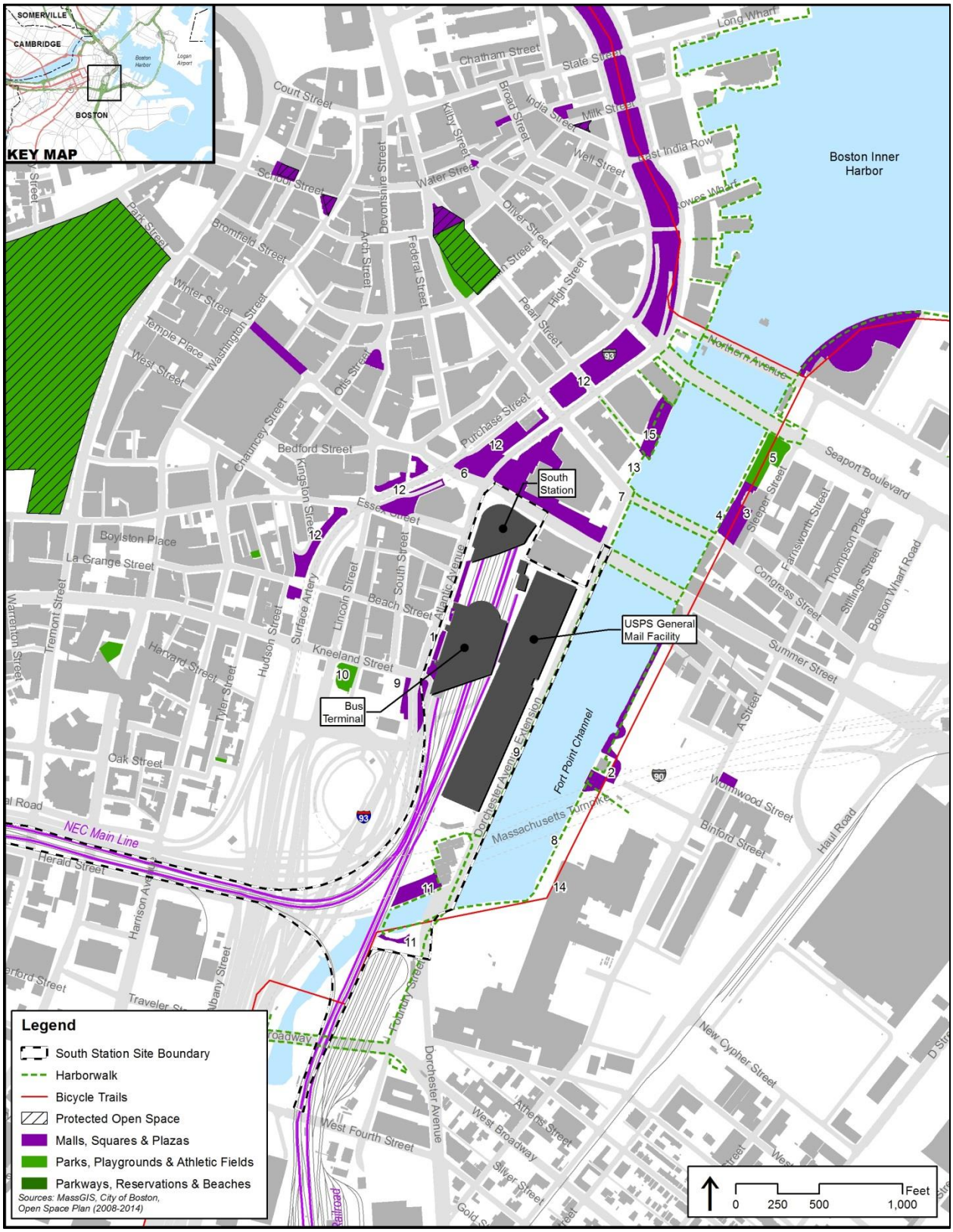

Figure 4-1 — Potential Section 4(f) Parks and Recreation Areas in the South Station Study Area

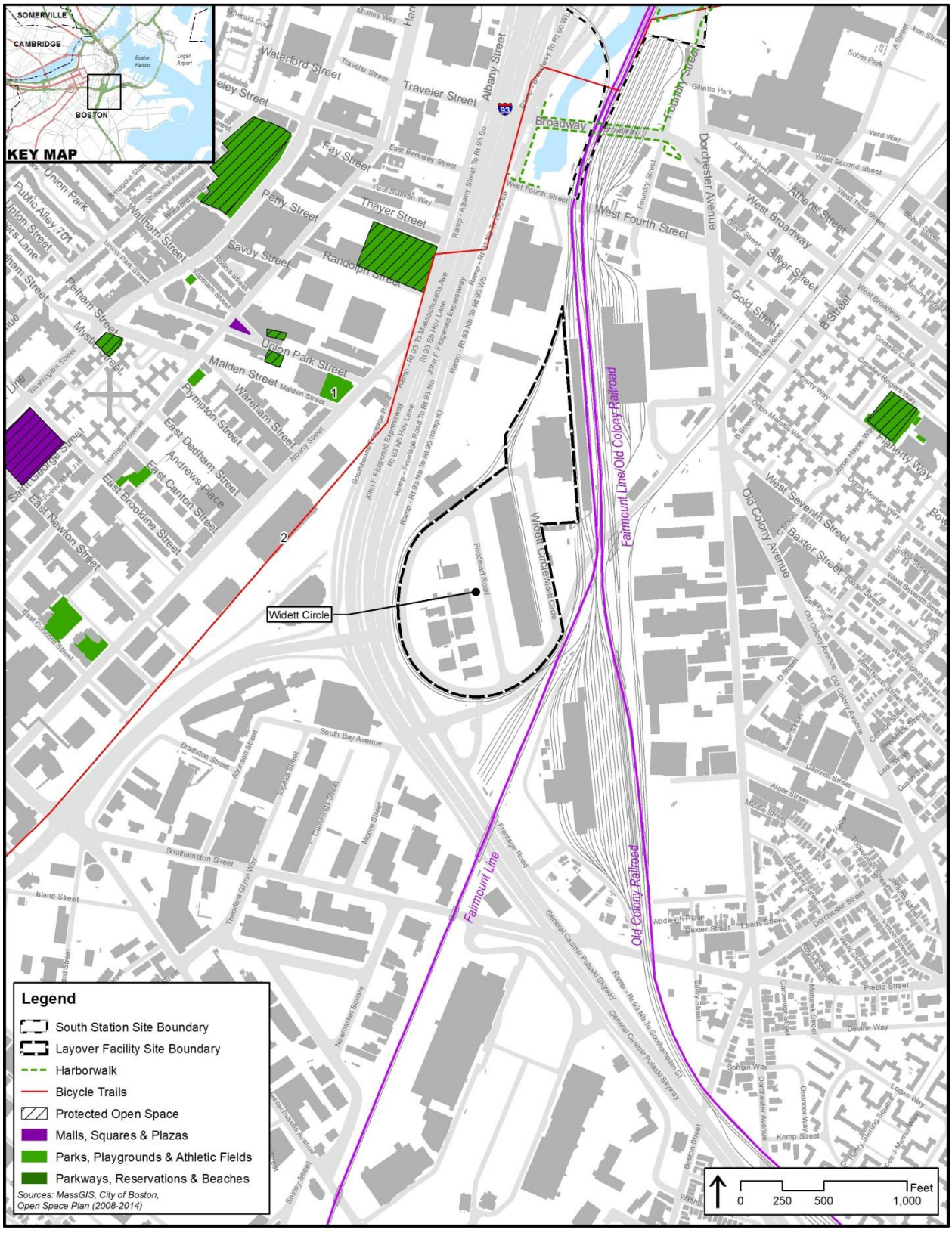

Figure 4-2 — Potential Section 4(f) Parks and Recreation Areas in the Widett Circle Study Area

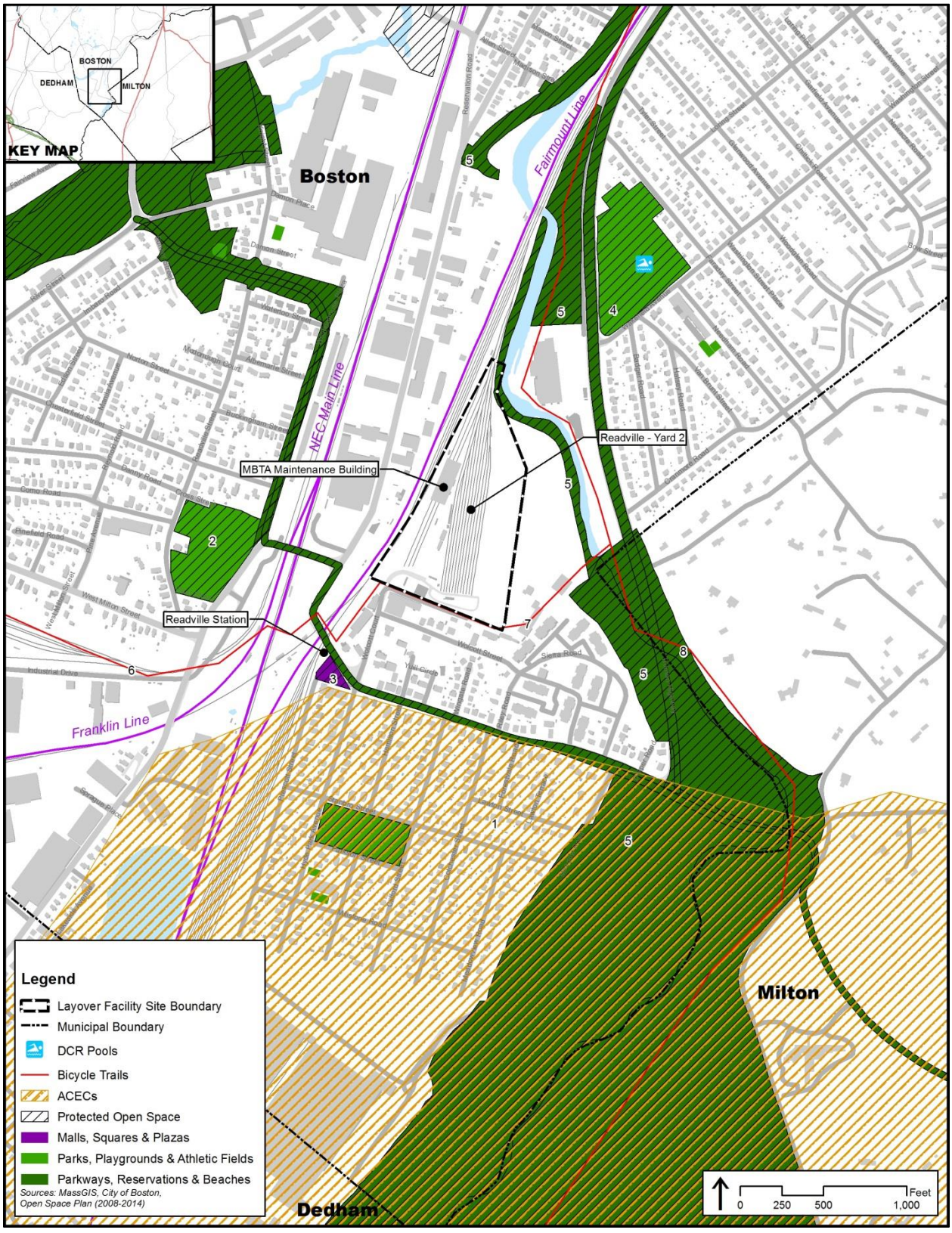

Figure 4-3 — Potential Section 4(f) Parks and Recreation Areas in the Readville – Yard 2 Study Area

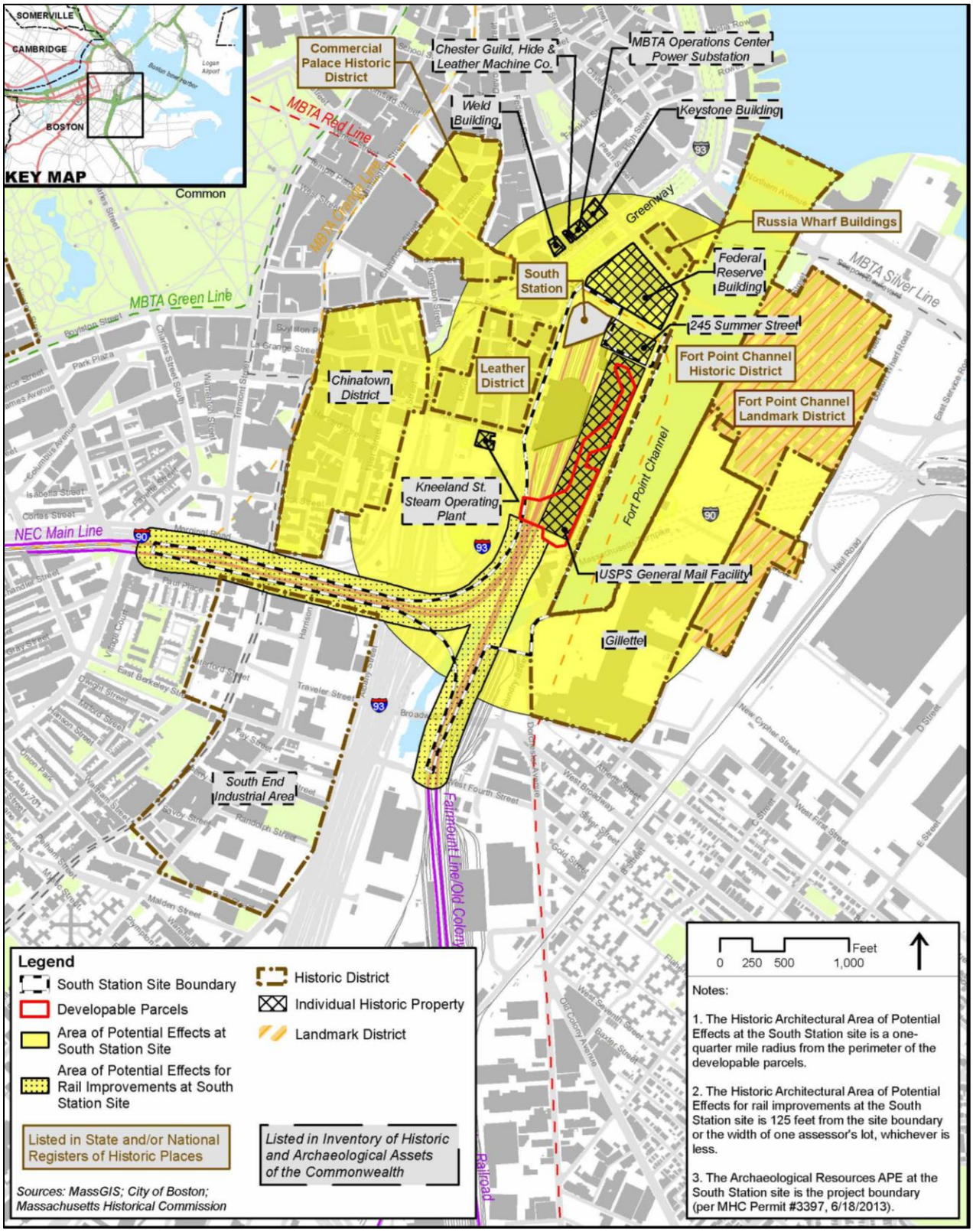

Figure 4-4 — South Station Historic Architectural Area of Potential Effects

4.5 Potential Impacts to Section 4(f) Resources

The Project Team compared the SSX Build Alternative plans to park, recreation area, and historical site boundaries to determine if the project would require any permanent acquisition or temporary occupancy of land. For determining constructive uses as defined by Section 4(f), the Project Team assessed noise and vibration impacts, access restrictions, and visual impacts to determine if these impacts would constitute a use of the Section 4(f) resource.

4.5.1 Parks and Recreation Areas

FRA has determined that the Build Alternative would not use any parks and recreation areas protected by Section 4(f). The Build Alternative would not require permanent land acquisition or temporary occupancy of any Section 4(f) park or recreation area. Constructive uses of parks and recreation areas occur primarily when there is an increase in noise levels due to the operation and construction of the project.

The parks and recreation areas closest to the South Station site include the Dewey Square Parks, Rolling Bridge Park, and the Fort Point Channel Harborwalk. The South Station building acts as a noise barrier for Dewey Square Parks/Rose Fitzgerald Kennedy Greenway, effectively shielding them from constructive use. The predicted noise levels at the Dewey Square Parks would remain compatible with outdoor recreation in this urban environment and would not be so severe that the activities at the parks would be substantially impaired or constitute a constructive use. Rolling Bridge Park is located approximately 900 feet south of the new tracks, and the Project Team anticipates no noise impacts will occur at this location.

Removal of the USPS facility adjoining South Station would increase noise levels from train operations along the Fort Point Channel Harborwalk on the opposite side of the Fort Point Channel. As mitigation, the Project Team would construct an 18-foot high noise barrier to reduce noise from train operations at the station along the existing and proposed sections of Harborwalk. With this mitigation, the predicted future noise levels in this location would remain compatible with outdoor recreation in this urban environment and would not be so severe that the activities would be substantially impaired or constitute a constructive use of the Harborwalk.

There are no parklands within 500 feet of the Widett Circle layover facility site; therefore, FRA has determined that there would be no Section 4(f) use in this location.

At the expanded Readville – Yard 2 layover facility site, the Massachusetts Department of Conservation and Recreation (MassDCR) Neponset River Reservation borders the northeast corner of the site, but no direct impacts to the Neponset River Reservation would occur. Noise levels from trains traveling along the Neponset River Reservation and into the layover facility would remain similar to existing conditions. With the extension of the existing berm/noise barrier at the Readville – Yard 2, and the distance from the layover facility, noise impacts are not expected to occur at either the MassDCR Neponset River Reservation or the Blue Hills Reservation immediately to the south.

As discussed in EA Chapter 3, there would be no substantive increases in visual impacts or vibration levels at these Section 4(f) parks or recreation areas, and therefore no constructive use of these facilities.

4.5.2. Historic Resources

Project impacts to historic properties include potential construction noise impacts to the South Station headhouse and potential operational noise impacts to the Fort Point Channel Historic District, as further described in the following section. Proposed mitigation measures would effectively eliminate or minimize any potential adverse project impacts.

The SSX project will not result in any direct alteration of the designated historic portions of the South Station headhouse, and the Project Team does not anticipate any temporary construction impacts (i.e., temporary occupancy) of the historic portions of the headhouse. The proposed elevated concourse will connect to the existing facilities at the platform level, outside of the existing headhouse, and no modifications to the interior of the building are currently proposed. The historic South Station headhouse includes the main concourse/waiting room, which was entirely reconstructed and rehabilitated consistent with the *Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitation of Historic Buildings* (*Standards*) in the mid-1980s as part of the station upgrades by FRA/MBTA.

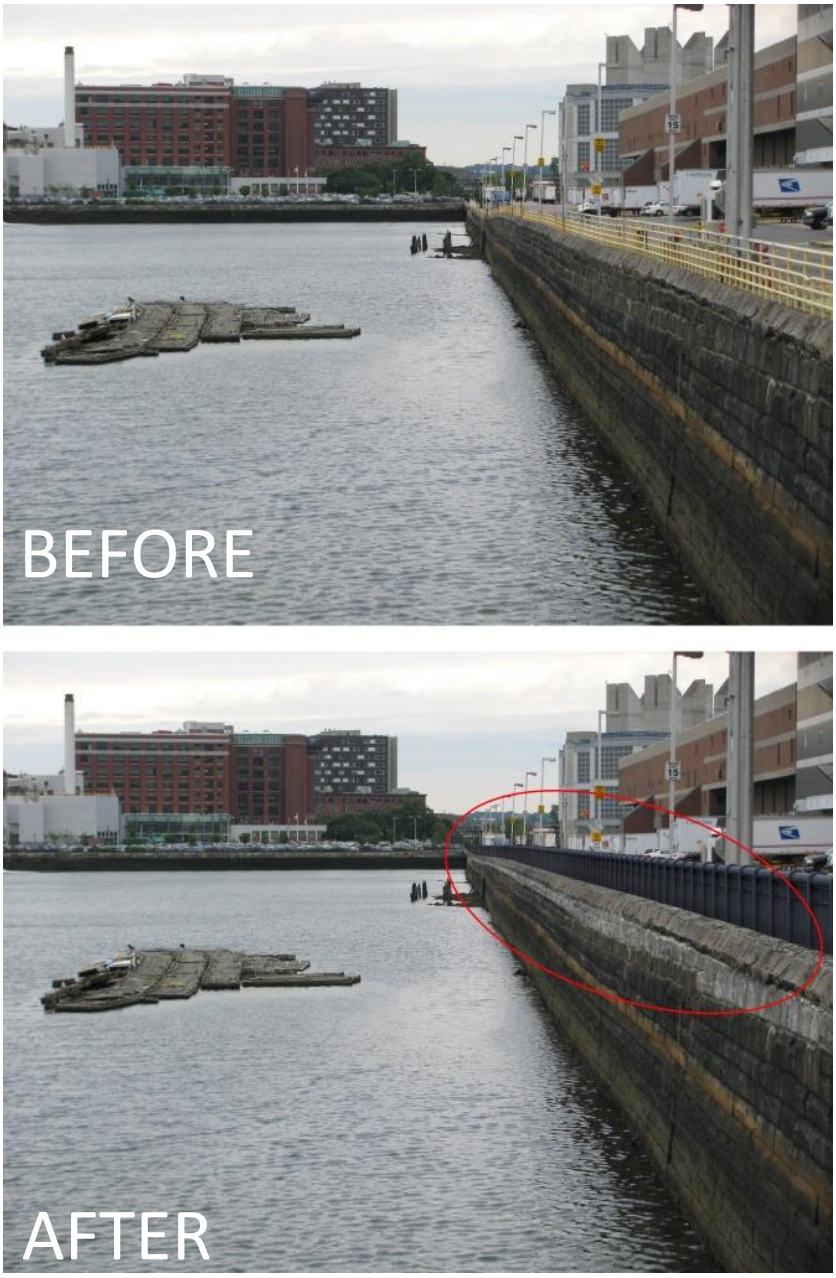

Figure 4-5 — Proposed Seawall Improvements – Before and After (View 1)

The Fort Point Channel east and west seawalls are contributing structures to the Fort Point Channel Historic District. The Build Alternative includes replacing the existing deteriorated railing to match the section of seawall across Summer Street and raising an approximately 700-foot section of the west seawall along Dorchester Avenue by 1.5 feet to match the elevation of the seawall to the north and south. MassDOT's proposal to raise the seawall is in response to recent projections of sea level rise of nearly two feet by the year 2050 and would help to mitigate potential flooding on the future South Station site. The raising of a 700-foot section of the Fort Point Channel seawall would be undertaken in a manner that is consistent with the *Standards* and would have no adverse effect on the seawall or the Fort Point Channel Historic District. Figures 5 and 6 provide before and after views of the proposed seawall improvements.

Figure 4-6 — Proposed Seawall Improvements – Before and After (View 2)

Under Section 4(f), FRA and MassDOT have determined that the proposed seawall improvements would have a *de minimis* impact. Replacing the deteriorated railing would enhance preservation of this historic resource and raising the elevation of the seawall represents mitigation to address sea level rise. For historic sites, a *de minimis* determination requires concurrence from the State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officer (THPO): (1) that there is "no adverse effect" or "no historic properties affected" on the historic resource and (2) with the U.S. DOT's determination that the Section 4(f) use is *de minimis*. U.S. DOT must also consider the views of any consulting parties participating in the Section 106 consultation. The SHPO, the Massachusetts Historical Commission (MHC), concurred with FRA's finding and proposed conditions in a letter dated May 9, 2017. In a letter dated June 20, 2017, the U.S. Department of the Interior also concurred with FRA's *de minimis* finding, and stated the agency had no comments on the Draft EA or Section 4(f) Evaluation.

At the South Station site, the Project Team assessed impacts to historic resources resulting from demolition activity and noise and vibration as discussed below. There are no historic properties within the Widett Circle or Readville – Yard 2 layover facilities sites. Accordingly, FRA does not anticipate any visual, wind, and shadow impacts to historic resources to result from the SSX project.

Noise

The proposed tracks would be located further from the existing headhouse than the existing tracks, which will reduce operating noise in the existing headhouse. In general, the noise from any single train operation, such as an Amtrak locomotive idling in front of the South Station headhouse, would generate the same noise level inside the headhouse for both the existing condition and the Build Alternative. However, the noise from all the trains operating at South Station over a 24-hour period (the Ldn noise level) would decrease because the train noise would be distributed over 20 tracks instead of the existing 13 tracks, with the new tracks located farther from the South Station headhouse. This is true, even accounting for the increase in the number of train operations at South Station between the existing and the future Build

Alternative. Moreover, the historic significance of South Station relates to its use as a transit hub and is not considered to be a quiet historic setting.

Prior to mitigation, a moderate noise impact would be expected to occur at sensitive residential receptors within the Fort Point Channel Historic District due to the removal of the USPS facility. As discussed in Sections 4.5.1 and 4.6.1, construction of a noise barrier would significantly reduce noise (10 to 12 dBA) at the Fort Point Channel Historic District, and would extend approximately 1,450 feet, essentially the full length of the USPS facility, to mitigate noise impacts for the entire Fort Point Channel Historic District.

The Ldn noise level (the average noise level over a 24-hour period) is expected to decrease at locations within the Leather District. The expansion would add tracks to the east of South Station further from the Leather District and would distribute the trains over a larger area and the project would also reduce the amount of train idling in the terminal area. This would also result in a reduction of the peak hour Leq noise level (the average sound pressure level during a period of time) along Atlantic Avenue and within the Leather District.

Prior to mitigation, the demolition and construction activity associated with the project would impact the South Station headhouse. While construction noise levels from the project are not expected to exceed FTA construction noise limits, they are expected to exceed the more stringent City of Boston construction noise limits at the existing headhouse based on the assumed construction equipment mix. Temporary noise barriers or noise enclosures for equipment would be utilized to mitigate construction noise levels at these receptors. A Construction Management Plan/Noise Control Plan would be implemented to mitigate construction noise levels, including providing noise monitoring during construction to determine compliance with FTA and City of Boston construction noise limits. With implementation of this proposed mitigation, FRA does not anticipate any construction noise impacts, and thus there will be no use under Section 4(f).

Vibration

Due to the slow speed of trains entering and leaving South Station (approximately 10 mph), train vibration levels would be below FTA criteria.[6] Train activity at South Station is not expected to result in any ground-borne noise inside the headhouse. Vibration levels generated by the construction equipment proposed for this project would not result in structural damage to the headhouse or other nearby historic buildings, but could exceed the FTA human annoyance criterion[7] and will be addressed and mitigated under the Construction Management Plan/Noise Control Plan.

4.5.3. Determination of Section 4(f) Use

Table 4-3 summarizes the Section 4(f) use determination. Multiple historic properties are located within the SSX APE, as summarized in Table 4-2. The project would have "no effect" on a majority of the historic properties, as discussed in the preceding section. With the exception of the *de minimis* impact of the seawall, project impacts to historic properties in the SSX APE would be limited to potential construction noise impacts to the South Station headhouse and potential operational noise impacts to the Fort Point Channel Historic District. As described in Sections 5.2 and 6.1, there

6 Vibration levels from train movements would be below FTA human annoyance criteria (for both residential and non-residential receptors) and impact criterion for building damage, as presented in Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment.* (Report No. FTA-VA-90-1003-06). May 2006.

7 *Ibid.*

would be no use under Section 4(f) of these properties, and a Construction Management Plan/Noise Control Plan would be implemented to assure construction noise would be in compliance with FTA and City of Boston construction noise limits. To minimize or eliminate adverse noise impacts to the Fort Point Channel Historic District, a noise barrier would be installed along the easternmost track, as described in Section 4.6.2. These mitigation measures would effectively minimize or eliminate any potential adverse project impacts. The project, as designed, would not have any adverse visual impacts on the South Station headhouse or surrounding historic properties.

FRA has determined that the project, implemented with noise mitigation and designed consistent with the historic preservation design principles (discussed in EA Section 3.17), would have no adverse effect on historic properties, and therefore would result in no Section 4(f) use, except in the case of the seawall, which would have a *de minimis* impact.

Table 4-3 — South Station Determination of Section 4(f) Use

Name	Determination of Effect
Properties listed in the National and/or State Registers of Historic Places	
Leather District	No Section 4(f) Use
Russia Wharf Buildings	No Section 4(f) Use
Commercial Palace Historic District	No Section 4(f) Use
Fort Point Channel Historic District	No Section 4(f) Use (*De Minimis* impact determination for seawall)
South Station Headhouse	No Section 4(f) Use
Fort Point Channel Landmark District	No Section 4(f) Use
Properties determined eligible for listing in National Register of Historic Places	
Chester Guild, Hide and Leather Machine Company	No Section 4(f) Use
Chinatown District	No Section 4(f) Use
Federal Reserve Bank of Boston	No Section 4(f) Use
Kneeland Street Steam Heating Plant	No Section 4(f) Use
South End Industrial Area	No Section 4(f) Use
Weld Building	No Section 4(f) Use
Gillette	No Section 4(f) Use

4.6 Summary and Conclusions

As discussed above, there would be no substantive increases in visual impacts or vibration levels at these Section 4(f) parks or recreation areas, and therefore no constructive use of these facilities.

4.6.1 South Station Headhouse and Fort Point Channel Harborwalk

The project would provide substantial public recreational benefit to this portion of the Fort Point Channel waterfront with the proposal to reopen public access on Dorchester Avenue (which is currently closed off for private use for USPS postal operations). Restoration of Dorchester Avenue would include the addition of landscaping and improved pedestrian and cycling connections and facilities, including adjacent sidewalks and crosswalks. The proposed Dorchester Avenue Harborwalk, to be constructed along the newly reconstructed South Station, would complete a missing link in the 40-mile public walkway extending along the Boston Harbor waterfront. Constructing one-half-mile of Harborwalk adjacent to Fort Point Channel would close one of the last remaining gaps in an otherwise continuous waterfront walkway. In addition to a dedicated pedestrian path, street furniture and landscaping would also be provided.

The SSX project will not result in direct alteration of the designated historic portions of the historic South Station headhouse, and the Project Team does not anticipate temporary occupancy of these areas during construction. The construction noise from the assumed mix of construction equipment has the potential to exceed the City of Boston construction noise limits, which are more stringent that FTA construction noise limits, at the historic headhouse, and vibration from construction equipment could exceed the FTA human annoyance criterion at the headhouse. The temporary construction impacts would be addressed through a Construction Management Plan/ Noise Control Plan, so that there would be no Section 4(f) constructive use during construction.

The Construction Management Plan/Noise Control Plan to be implemented to mitigate construction noise levels would include noise monitoring during construction to determine compliance with FTA and City of Boston construction noise limits. The Construction Management Plan/Noise Control Plan would provide a detailed list of construction equipment used in each construction phase, including the type and location of each piece of equipment. The Construction Management Plan/Noise Control Plan would establish vibration limits and other similar performance criteria, as well as require the contractor to plan and implement mitigating measures if adverse impacts were detected during construction.

If the construction noise levels were predicted to exceed the FTA or City of Boston construction noise limits, then appropriate noise mitigation measures, such as noise barriers, would be evaluated, including determining the appropriate location, height, and length of the noise barrier to provide effective mitigation. During construction at the South Station site, precondition surveys and vibration monitoring would be conducted to document initial conditions and to monitor vibration levels during construction. Below-grade work would be conducted under the technical monitoring of a geotechnical engineer, to observe and document construction procedures, monitor vibrations, and to anticipate and facilitate any needed mitigation measures.

In addition to this construction mitigation, permanent noise mitigation is proposed to substantially reduce operating noise from trains to avoid impacts on the Fort Point Channel Section 4(f) resources. As described in EA Section 3.3, the removal of the USPS facility would increase noise from idling locomotives across Fort Point Channel, which would otherwise result in noise impacts to the Harborwalk and the historic Fort Point Channel Historic District. The proposed installation of a 1,450-foot long, 18-foot-high noise barrier along the easternmost track of the South Station Terminal would eliminate or minimize these noise impacts, and there would be no constructive use of Section 4(f) resources.

4.6.2 Seawall Reconstruction

A 700-foot section of the west historic Fort Point Channel seawall along Dorchester Avenue will be raised by 1.5 feet to match the elevation of the seawall to the north and south, which FRA and MassDOT have determined would have a *de minimis* impact. This *de minimis* determination is based on FRA's finding that there would be no adverse effect on the seawall, which is a contributing component of the Fort Point Channel historic district, and the fact that the elevation of the seawall represents mitigation to address sea level rise.

The option of not reconstructing the seawall is not considered a prudent and feasible alternative as it does not adequately mitigate and address sea level rise. The seawall is not at a consistent elevation throughout the site, it is being reconstructed to match higher sections to the north and south. The locations where the 100-year coastal flood zone encroaches upon the site correspond to the lower areas of seawall. If the seawall is not constructed, much of the South Station site, as well as much of the areas surrounding South Station, would be inundated in the future with the projected sea level rise during a 100-year flood event.

In the absence of mitigation, the 100-year floodplain would encompass approximately 38 acres of the SSX project footprint, representing nearly complete inundation of the site and infrastructure, during a 100-year flood event, assuming a 2-foot rise in sea level by the year 2050. By 2070, portions of the South Station platform areas could flood to a depth of between 0.5 feet and 1.5 feet under the conditions of a 3.2-foot rise in sea level. The proposed seawall would elevate the barrier to the Fort Point Channel to prevent inundation by channel waters due to sea level rise. In addition, the proposed wall addition would also elevate the seawall above the 100-year flood elevation, thereby substantially reducing the extent of flooding on the site.

Mitigation measures for impacts on historic resources are described in more detail in EA Section 3.17. The seawall improvements, which are within the Fort Point Channel Historic District, have been designed to be consistent with the Secretary of the Interior's Standards for Rehabilitation. Replacing the deteriorated railing would enhance preservation of this historic resource. The new course of seawall would be constructed of granite blocks, either recovered from near the seawall/channel or acquired from local quarries in Massachusetts or New England.

With the proposed mitigation measures, the Build Alternative would involve either no Section 4(f) use, or, in the case of the seawall, a *de minimis* impact.

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Chapter 5 – Public Involvement and Agency Coordination

MassDOT is committed to engaging all members of the public, including disabled and Environmental Justice (EJ) populations. The SSX project has received public input throughout the planning process to help develop the project in coordination with a range of interests. This chapter summarizes MassDOT's ongoing efforts to involve the public and coordinate with local, state, and federal government agencies and stakeholders.

In May 2013, FRA and MassDOT invited Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) to be NEPA cooperating agencies, and in December 2014, invited the USPS to be a NEPA cooperating agency. FRA and MassDOT have continued to provide the NEPA cooperating agencies with project documents (including the Draft EA) for review as appropriate. Amtrak has been involved in the project since 2013 as an official project stakeholder as well as a cooperating agency for the NEPA process. Amtrak has a significant presence at South Station and the Project Team has engaged them throughout the project via recurring meetings and workshops.

The draft EA and draft Section 4(f) Determination was released in April 2017 to agencies, project stakeholders, and individuals on the project distribution list. The draft document was circulated for a 30-day public comment period. FRA will issue its Final Section 4(f) Determination and the NEPA decision document, a Finding of No Significant Impact (FONSI). Public comments are addressed in the FONSI.

5.1. Public and Agency Involvement Goals

The Public Involvement Plan (PIP), which is posted on the SSX project website, established the following goals:

- To provide an interactive, collaborative, and credible public process that welcomes communities of interest and provides a variety of ways for the public to be involved in, contribute to, and review and provide input to draft project ideas and plans;
- To assist the planning team by presenting ideas and recommendations from the public that would result in a project that is achievable, reflective of public aspirations, and enhances multimodal transportation for the city, region, and NEC;
- To provide methods to keep neighbors, residents, business owners, city, state, and regional officials, and users of South Station involved and updated regularly on development of project plans; and
- To present the alternatives for and impacts of potential layover site alternatives.

As described in the PIP, MassDOT also follows the guiding principles of EJ[1] and Title VI,[2] part of the Civil Rights Act of 1964:

- To avoid, minimize, and mitigate disproportionately high and adverse effects on EJ and Title VI populations;
- To ensure the full and fair participation by all potentially affected communities; and

[1] Areas with high minority, non-English speaking, and/or low-income populations.

[2] Provides protection from discrimination based on race, color, and national origin in programs and activities.

- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

5.2. Stakeholders

The PIP included outreach to the following stakeholders:

- **The traveling audience and regional stakeholders:** MassDOT focused on reaching MBTA commuter rail and Amtrak passengers (using social media, information at the station, email, a display board in South Station, and periodic information sessions at the Station) to identify their concerns and capture information about their current usage patterns at South Station.
- **The abutting neighborhoods:** MassDOT identified two areas for particular focus: the adjacent South Station neighborhood and the group of abutters near the layover sites (Widett Circle and Readville – Yard 2). Targeted outreach in the station area included approximately 14 briefings for community and business groups in the Leather District, Chinatown, Fort Point Channel, and the Financial District, as well as the Waterfront area; business, land use, and transportation organizations; and stakeholders surrounding the proposed layover sites. MassDOT provided customized presentations for the neighborhoods adjacent to the Readville – Yard 2 and Widett Circle layover facilities.
- **Specific constituencies:** MassDOT developed and publicized two online surveys in three languages (English, Spanish, and Chinese) to gather comments from general users of the station on amenities and from pedestrians and bicyclists on use of the station. The project brochure was also available in multiple languages.
- **Agency briefings:** MassDOT conducted more than 40 meetings with city, state, and federal agencies. These briefings included the MassDEP; BWSC; Massachusetts Port Authority (Massport); regional transportation planning organizations; the USPS; FTA; FAA; FRA; FHWA; and many meetings with the BPDA (formerly the BRA), BTD, and other City of Boston departments.
- **Legislative briefings:** MassDOT briefed elected officials in advance of major project milestones (such as the filing of the ENF, DEIR, and FEIR); and held specific briefings for the Boston City Council and for officials representing areas under consideration for layover facilities.

5.3. Methods for Engaging the Public and Agencies

The following sections discuss the methods used to engage interested stakeholders. These strategies applied to South Station and to the proposed layover facility sites.

5.3.1. Public and Agency Information Meetings/Open Houses and Briefings

MassDOT conducted the following general meetings and briefings, in accessible locations in or close to South Station and public transportation (Table 5-1):

- **Open Houses:** MassDOT hosted two public open houses (one in the early morning and one in the evening) in the South Station neighborhood on November 19 and 20, 2012. There were 91 attendees between the two meetings. MassDOT shared project information and gathered input and ideas on project alternatives, as well as community and stakeholders' needs and preferences.
- **ENF Scoping Session:** MassDOT staffed a scoping session on April 1, 2013 for the ENF filing. There were 55 attendees at the Scoping Session.

- **DEIR Public Hearing:** MassDOT hosted a hearing on November 18, 2014, during the extended comment period for the DEIR. The hearing was widely publicized through a postcard mailing, by email, flyers (in English, Chinese, and Spanish), a media release, and newspaper advertisements. There were 57 attendees at this hearing.
- **FEIR Public Meeting:** MassDOT held a public meeting on July 20, 2016, during the public comment period for the FEIR. At this meeting, MassDOT also presented the status of the federal environmental review process, including the preparation of this EA and continuation of the Section 106 review process. The meeting was advertised in major regional print publications (in English and Chinese), in newspapers serving the neighborhoods of the potential layover sites; through the project email list; using a media advisory; and in the MassDOT weekly online news. There were 40 attendees at this meeting.
- **Briefings:** MassDOT conducted more than 40 briefings with residential stakeholders; business owners (large and small); direct abutters and property owners; major employers; and community, transportation, and land use organizations.
- **Information Sessions at South Station:** MassDOT organized recurring sessions at South Station at various points during the project.

Table 5-1 Summary of Stakeholder Meetings, 2012-2016

Meeting Type	Number of Meetings to Date
Institutions and Business Group Meetings	27
Public Meetings/Open Houses/Events at South Station and nearby	10
Neighborhood and Advocacy Groups	14
Public Agencies and Elected Officials	10
Interagency Meetings	82
Total	**143**

5.3.2. Engaging Environmental Justice (EJ) and Title VI Populations

The SSX project will benefit EJ communities by improving access to public transit, jobs, and other community services. No disproportionately high and adverse human health and environmental effects, including air quality, visual, social, and economic effects, are anticipated to affect EJ populations due to the SSX project. The analysis was provided in the DEIR, Appendix 3 - *Environmental Justice and Title VI Technical Report*.[3] This analysis is included in Section 3.14 of the EA. As part of the project outreach, MassDOT emphasized efforts to reach EJ and Title VI populations. This outreach included:

- Working with the City of Boston's Office of Neighborhood Services to determine how and where best to distribute meeting information and project notices in multiple languages, including in the adjacent Chinatown neighborhood and near potential layover facility sites;
- Providing information to city, community, and neighborhood groups related to the project, to meetings, and how to participate;
- Developing printed and electronic materials in multiple languages, either upon request or as a regular service depending on the populations engaging in project activities;

[3] Massachusetts Department of Transportation. South Station Expansion Project. *Draft Environmental Impact Report, Appendix 3 – Environmental Justice and Title VI Technical Report*. October 2014.

- Providing accessible accommodations upon request at in-person events, such as American Sign Language interpreters for information sessions; and
- Meeting with community groups to present project-related information.

Analyses undertaken as part of the project identified and assessed potential adverse effects; determined whether adverse effects could be avoided, minimized, or mitigated; and assessed benefits versus burdens on the environment and community.

5.3.3. Section 106 Consultation Process

As discussed in Section 3.17, MassDOT and FRA evaluated the potential effects of the project on historic architectural and archaeological resources in accordance with Section 106 of the National Historic Preservation Act as amended by the Advisory Council on Historic Preservation's implementing regulations for Section 106 (36 CFR 800). FRA and MassDOT consulted with the Massachusetts Historical Commission (MHC) in its role as State Historic Preservation Officer (SHPO) and other interested parties. The following stakeholders were invited to participate in the Section 106 consultation process:

- Wampanoag Tribe of Gay Head
- Mashpee Wampanoag Tribe
- Massachusetts Commission on Indian Affairs
- Boston Landmarks Commission
- Friends of Fort Point Channel
- Amtrak
- Boston Preservation Alliance
- Boston Harbor Now
- Fort Point Channel Landmark District Commission
- Metropolitan Area Planning Council
- Preservation Massachusetts
- Save the Harbor/Save the Bay
- WalkBoston

Amtrak, Boston Preservation Alliance, Boston Harbor Now, and the Mashpee Wampanoag Tribe accepted the invitation to participate and were provided project materials for review and comment. The Mashpee Wampanoag Tribe has no concerns related to the proposed project. On behalf of FRA, MassDOT has committed to provide project plans of the proposed improvements to the historic and expanded headhouse, and to the Fort Point Channel seawall, to MHC and the consulting parties (Amtrak, Boston Preservation Alliance, and Boston Harbor Now) at the 30% and 60% design phases. The plans will be submitted for review to confirm the design of these project elements is consistent with the SSX Project's established design principles and Secretary of the Interior's Standards for Rehabilitation regarding new construction, in accordance with FRA's Conditional No Adverse effect finding. MHC concurred with FRA's proposed finding on May 9, 2017. Correspondence from the Section 106 Consultation process is provided in Appendix D.

5.4. Communication Tools

5.4.1. Project Website

The project website (http://www.massdot.state.ma.us/southstationexpansion/Home.aspx) is frequently updated and features meeting notices, project documents, links to media and other services, and ways to contact the project team. Project materials posted on the website meet General Services Administration

(GSA) Section 508 and MassDOT's web accessibility standards. MassDOT established a quick response (QR) code to facilitate communication, linking directly to the project website via the use of smart phone technology.

5.4.2. Email and Print Notices

The project team used a number of methods for communicating with the public about project meetings, issues, and publications. The project team developed a database that includes abutters to the South Station property and to layover facility sites under consideration, and current users of facilities and services at or near the project site(s) who attended a meeting or signed up at an information session. MassDOT mailed to identifiable site abutters an invitation to join the email database to facilitate frequent communication at the start of the project. Sign-in sheets at meetings and briefings were used to expand the email database, and the website included a link for site visitors to sign up to receive project information.

The project database (of more than 2,400 addresses) also includes public officials and agency representatives; those who attended meetings; people who requested to be added to the database; people who commented on project materials or documents; and other interested stakeholders.

5.4.3. Supporting Materials

MassDOT and the project team produced a project brochure in English, Spanish, and Chinese. Spanish is the top of ten non-English languages spoken in Massachusetts; South Station is located adjacent to Boston's Chinatown neighborhood and MassDOT offered several presentations to community groups in the area. MassDOT produced a series of seven project fact sheets to coincide with major project milestones. The fact sheets are posted on the project website for easy printing, and they are distributed at project meetings and presentations.

In addition to project documents (such as technical memoranda and reports), key presentations are posted on the project website and made available in print format, large print, or other languages upon request. The results of the surveys conducted to gather opinions from South Station users, commuters, and visitors are also posted on the project website.

5.4.4. Social Marketing

Project meetings and events were publicized through media advisories and the use of other social media by MassDOT. The media list is regional in nature and includes professional industry publications. Diverse media (including non-English language) are incorporated in the list (see Table 5-2).

Table 5-2 Summary of Media Advertisements

Newspaper	Open Houses	ENF	DEIR	FEIR	Draft EA/ Section 4(f) Determination
Boston Globe	X	X	X	X	X
Boston Metro	X		X		
Sampan	X	X	X	X	X
Boston Courant *(ceased publication in 2016)*	X	X			
Hyde Park Bulletin				X	X
South Boston Online				X	X
South End News					X
Dorchester Reporter					X
South Boston Today					X

MassDOT used a variety of social marketing techniques to keep the public engaged in the project. The team posted regular updates through a variety of social media, including the MassDOT blog, Twitter feed, and Flickr account. This included more than 70 blogs, Facebook postings, and Twitter references.

5.5. Coordination with Ongoing Projects

MassDOT coordinated its project planning on a regular basis with Amtrak, the City of Boston (BPDA [formerly BRA] and BTD), MAPC, Massport, FRA, other U.S. DOT agencies (including the Northeast Corridor Commission), existing and potential developers, and state and federal environmental regulatory agencies. FRA is advancing the NEC FUTURE program concurrent and in coordination with the SSX project. Coordination with the I-90 project was undertaken for review of the proposed layover site at BPY (now being conducted as part of a separate environmental process).

5.6. Meeting Summaries and Issues Tracking

The project team kept summaries of all meetings involving this project and tracked meetings and issues. The DEIR and FEIR meeting transcripts, public comment letters, and responses to comments are posted here on the project website: http://www.massdot.state.ma.us/southstationexpansion/Documents.aspx

Through the public process, there has been general public support for the project including the ability for the station to expand to meet current and future rail needs, re-open Dorchester Avenue as a public space, and improve the passenger experience. Some concerns about the project that have arisen during the outreach process include interest for the North South Rail Link, the siting of the layover facilities, and the need to relocate the USPS facility.

Chapter 6 – Conclusion

The FRA, in conjunction with MassDOT, the MBTA, and Amtrak, is pursuing the expansion of South Station by circulating this EA, as well as other project development activities. The Preferred Build Alternative, analyzed in this EA, would meet the established Purpose and Need of the project by acquiring and demolishing the USPS facility in order to expand South Station Terminal capacity, reopening Dorchester Avenue, and extending the Harborwalk. The Build Alternative would provide related layover capacity in order to meet current and future high-speed, intercity, and commuter rail service needs. The Build Alternative would enable growth in passenger rail transportation within the Commonwealth of Massachusetts and along the NEC. The Build Alternative will not preclude the improvements proposed by the NEC FUTURE program; rather, the SSX project includes investments that can later be leveraged by MassDOT and FRA to initiate the additional improvements proposed by the NEC FUTURE program to accommodate service levels beyond 2035. Expanding the terminal would improve the passenger experience at South Station, while updating track and signal infrastructure and related layover capacity would improve service reliability and will help prepare the station to accommodate future growth defined through FRA's NEC FUTURE program.

There are four primary components of the SSX Build Alternative (presented in order of proposed construction sequence):

- Acquire and demolish the USPS facility;
- Reopen Dorchester Avenue and extend the Harborwalk;
- Expand the South Station Terminal; and
- Construct rail layover facilities.

Together, these four main components would provide many benefits related to transportation services, the environment, and public amenities, including:

- **Rail Service**
    - Improves reliability and service
    - Increases operational efficiency
    - Supports increased ridership
    - Addresses midday layover deficiencies
    - Prepares the station to accommodate future growth associated with FRA's NEC FUTURE program
- **Passenger Experience**
    - Implements ADA upgrades
    - Provides expanded South Station Terminal facilities
    - Improves passenger amenities throughout

- **Pedestrian Connections**
  - Extends the Harborwalk
  - Improves pedestrian connections through and around South Station
- **Bicycle Accommodations**
  - Provides new cycle track on Dorchester Avenue
  - Provides additional bicycle storage at South Station
- **Vehicular Circulation**
  - Reopens Dorchester Avenue for public use
  - Improves overall roadway and intersection operations
  - Provides new curbside facilities for pick up and drop off at the station
- **Multimodal Connections**
  - Improves connectivity between the rail station and bus terminal
- **Environment**
  - Reduces greenhouse gas emissions
  - Improves area resiliency to future sea level rise
  - Improves stormwater management
  - Increases public open space
  - Restores public waterfront access via the Harborwalk

The Build Alternative, as currently designed, would meet MassDOT's performance objectives for passenger rail operations in the 2035 horizon year, including:

- Meeting 95% OTP goals and minimizing delays;
- Providing sufficient track and platform capacity;
- Accommodating passenger service needs;
- Providing adequate train layover capacity; and
- Preparing the station for expansion beyond 2035.

In accordance with NEPA, an assessment of impacts of the Build Alternative and any adverse effects, including indirect and cumulative effects, was performed in consultation with appropriate federal, state, and local authorities that have jurisdiction by law or special expertise regarding particular resource areas and impacts. Primary impacts related to the construction of the Build Alternative are addressed through mitigation measures (as summarized in Table 6-1). Environmental enhancement measures (for example, the implementation of sustainable design measures, water efficiency measures, pedestrian and bicycle amenities, etc.) are proposed to further minimize impacts as discussed throughout the EA.

Table 6-1 — Environmental Resources, Potential Impacts and Proposed Mitigation

Environmental Resource	Potential Impacts of the Build Alternative	Proposed Mitigation
Air Quality	• No significant impacts. • Reduces carbon dioxide (CO_2) emissions from locomotives idling at South Station. • Increases CO_2 emissions from other mobile sources locally. • Beneficial regional impact on CO_2 emissions.	• No mitigation required.
Noise and Vibration	• Generates moderate noise impacts at 245 Summer Street. • Generates non-significant impacts to sensitive noise receptors across the Fort Point Channel. • Generates moderate noise impacts along Wolcott Street and Wingate Road, and Riley Road and Sierra Road in the vicinity of Readville – Yard 2. • No vibration impacts.	• Construction of an approximately 1,450-foot long, 18-foot high noise barrier, extending along the easternmost track. • Extension of the existing berm/noise barrier at Readville – Yard 2 up to approximiately 800 feet long and 18 feet high.
Water Resources	• No significant impacts to water resources. • Reduces net impervious cover at South Station and Widett Circle. Increases net impervious cover at Readville – Yard 2. • Provides ground water recharge at South Station. • Improves water quality. • Reduces water use and wastewater generation at Widett Circle. Increases water use and wastewater generation at South Station and Readville – Yard 2.	• Stormwater Best Management Practices (BMPs) will mitigate changes in stormwater peak flow rates, runoff volumes, groundwater recharge volumes, and water quality, and limit construction impacts. • Site-specific Stormwater Pollution Prevention Plans and Operation and Maintenance (O&M) plans will be prepared. Water efficiency measures will be incorporated. • An Infiltration/Inflow (I/I) plan will be developed to mitigate for increased wastewater flows at the South Station site.
Wetlands	• No direct wetland impacts at South Station and Widett Circle. • Non-significant resource impacts at South Station include land subject to coastal storm flowage, coastal bank, and buffer zone to coastal bank. • Non-significant resource impacts at Readville – Yard 2 include riverfront area, isolated vegetated wetlands, and buffer zone to Neponset River bank.	• No mitigation required for Widett Circle. • Work at South Station and Readville – Yard 2 will comply with appropriate performance standards and any conditions required by the Boston Conservation Commission. • Mitigation (if required) for disturbed wetland impacts at Readville – Yard 2 to be determined through consultation with U.S. Army Corps of Engineers (USACE).
Floodplains and Sea Level Rise	• No significant impacts. • No impacts to flood storage capacity. • Helps mitigate current and future flooding.	• Raises a portion of the seawall to help mitigate flooding from projected two feet of sea level rise by the year 2050. • Additional site-specific elements will be implemented to minimize

Environmental Resource	Potential Impacts of the Build Alternative	Proposed Mitigation
		vulnerability to future flooding events. • Drainage systems will be sized for future climate conditions where necessary.
Waterways and Coastal Zone Management	• No impacts to Wild and Scenic Rivers. • Replaces a nonwater-dependent use with publically accessible development, transportation infrastructure, open space. • Requires Chapter 91 license for a new nonwater-dependent infrastructure project and a Public Benefits Determination.	• No mitigation required.
Energy and Greenhouse Gas (GHG) Emissions	• No significant impacts. • Reduces stationary source GHG emissions in compliance with the Massachusetts Stretch Energy Code.	• To further minimize impacts, use of renewable energy, such as solar photovoltaic energy, solar hot water, district energy steam, and electric plug-ins for trains are under consideration by MassDOT/MBTA.
Aesthetics and Design Quality	• Improves the viewshed along Dorchester Avenue and from across the Fort Point Channel through the removal of the USPS facility and introduction of landscaping, pedestrian and cycling facilities, and the expanded headhouse. • Does not impact other views as the height of the proposed structures is lower than existing structures. • Includes a headhouse expansion with a prominent entrance along Dorchester Avenue that respects the primary historic entry at Dewey Square.	• No mitigation required.
Transportation	• No significant impacts. • Increases ridership. • Improves pedestrian circulation and enhances the pedestrian experience. • Increases pedestrian flow on Silver Line and Red Line platforms. • Improves or retains Level of Service (LOS) at most impacted intersections. • Relieves curbside congestion on Atlantic Avenue. • Improves bicycle infrastructure.	• Roadway, bicycle, and pedestrian improvements will be implemented at eight signalized intersections.
Possible Barriers to Handicapped and Elderly	• Complies with the Americans with Disabilities Act (ADA) of 1990 and Massachusetts Architectural Access Board (MAAB) regulations. • Provides adequate space and appropriate facilities to safely and conveniently manage the projected peak-hour pedestrian demand. • Complies with current egress capacity and travel distance requirements.	• No mitigation required.

Environmental Resource	Potential Impacts of the Build Alternative	Proposed Mitigation
Land Use and Zoning	• Requires acquisition of the USPS property, a parcel adjacent to 245 Summer Street, land and right-of-way at the Widett Circle site, and land adjacent to Readville – Yard 2.[1] • Includes the reopening of Dorchester Avenue. • Is consistent with local zoning and other local planning and development plans.	• Footprints required to support site functions will be minimized. • Property acquisitions and relocations will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, 42 USC 4601; CFR 49 Part 24 and/or Massachusetts General Law (M.G.L.) 79A. • Fair market values will be paid for property acquisitions at the Widett Circle and Readville – Yard 2 sites. • Impacts to Department of Public Works operations near Widett Circle will be minimized.
Socioeconomic	• Provides approximately 200 new permanent jobs at South Station. • Supports the continued economic growth and expansion of the Downtown Financial District and adjoining South Boston Waterfront/Innovation District. • Results in the relocation of approximately 1,000 USPS jobs. • Displaces approximately 30 private businesses currently operating at the Widett Circle layover facility site.	• As discussed for Land Use and Zoning, required relocation assistance and compensation would be provided for affected property owners.
Environmental Justice	• Benefits environmental justice (EJ) populations that use the station by providing improved transportation facilities and additional areas of open space, including the new Harborwalk on Dorchester Avenue.	• No mitigation required.
Public Health and Safety	• Improves passenger, traffic, pedestrian, and bicycle safety. • Minimizes surveillance problems.	• The following will be prepared and implemented: a Safety and Security Program Plan (SSPP), a Preliminary Hazard Analysis, a Threat and Vulnerability Assessment, a Preliminary Safety and Security Design Criteria Manual, and site specific Health and Safety Plans. • Phase II Environmental Site Assessments will be completed. • Asbestos-Containing Materials (ACM) and hazardous materials will be identified prior to demolition.

[1] As described in Chapter 1 and Appendix B, the SSX project involves acquisition and demolition of the USPS GMF located on Dorchester Avenue adjacent to South Station, which would provide an approximately 14-acre site on which to expand South Station. Although demolition of the USPS facility after it is vacated is part of the project, the relocation of USPS operations is not part of the project. For the purposes of this indirect assessment, it is assumed that the USPS GMF could be relocated to a site in South Boston on the Reserved Channel in Boston's Seaport District (Figure 1 of Appendix B) that the USPS had previously identified as potentially being appropriate to accommodate a relocated USPS GMF. The USPS would determine the future location(s) to which its operations would be relocated, and the relocation would be subject to its own environmental review as required by state and federal regulations as a separate project. The actual relocation of the USPS GMF would be subject to negotiations between the USPS and MassDOT/the Commonwealth of Massachusetts.

Environmental Resource	Potential Impacts of the Build Alternative	Proposed Mitigation
Parks and Recreational Areas	• Provides significant benefits and recreational opportunities associated with reopening Dorchester Avenue, including a cycle track, Harborwalk extension, and increased access to the Rolling Bridge Park and the Fort Point Channel waterfront. • Has no adverse impacts on parks and recreation areas in the vicinity of the project sites.	• No mitigation required.
Cultural Resources/ Section 106	• Improves views to and from the Fort Point Channel Historic District. • With mitigation, has Conditional No Adverse Effect on historic properties. • Contains no archaeologically sensitive sites.	• Implementation of a Construction Management Plan (CMP)/Noise Control Plan. • Construction of noise barrier at South Station. • Rehabilitation of Fort Point Channel seawall along Dorchester Avenue and expansion of South Station, consistent with project Design Principles, Secretary of the Interior's Standards for Rehabilitation, and guidelines for new construction. • MHC and other Section 106 consulting parties review of 30% and 60% design plans.
Construction Period Impacts	• No significant construction impacts. • May temporarily impact rail service. • May temporarily disrupt traffic and increase congestion. • May cause temporary dust emissions, direct emissions, noise, and vibration from construction equipment, and indirect emissions from vehicles. • Impacts from potential exposure to contaminated soils, debris, or groundwater during construction. • Provides permanent employment within South Station and in system-wide rail-related employment, as well as temporary construction jobs.	• Prepare and implement: a construction phasing schedule that balances duration and impact by optimizing overnight work windows, weekend work outages, and strategic track closures; a CMP; a SWPPP; a Dust and Emissions Control Plan; a Construction Noise Control Plan; appropriate soil management procedures; and Soil Erosion and Sediment Control measures. • MassDOT's and City of Boston's specifications for traffic management requirements and work hour provisions will be followed. • Vibration levels will be monitored at project sites during construction and any needed mitigation measures will be facilitated. • Provisions in the BWSC Stormwater Permit and MWRA 8(m) Permit will be followed. • Soil erosion and sediment controls for construction activity adjacent to wetland resources will be implemented.

Environmental Resource	Potential Impacts of the Build Alternative	Proposed Mitigation
		• MassDOT/MBTA will prepare an unanticipated discoveries plan prior to construction to address the possibility of encountering previously undocumented resources during construction. • MassDOT/MBTA will continue to work with all relevant agencies, utilities, and project stakeholders as appropriate agencies to identify necessary permits. • MassDOT/MBTA will continue coordination with Massport throughout design and construction to minimize construction impacts to airspace, and to identify necessary permits. • MassDOT/MBTA will continue to coordinate with MWRA and BWSC during subsequent design phases and will provide data on the existing sewer system performance and sewer model results from existing and proposed (Build) conditions after it has been collected. • MassDOT/MBTA will continue to coordinate with MWRA during subsequent design phases on the I/I plan, particularly with regard to the CSO outfalls in the vicinity of the SSX project. In addition, there are other projects planned in the area that may impact the I/I plan and MassDOT/MBTA will continue coordination with those projects to ensure all future flows are mitigated accordingly. • MassDOT/MBTA will comply with 360 C.M.R. 10.016 (State Sewer Use Code for Gas/Oil Separators), as well as 248 C.M.R 2.00 (State Plumbing Code), and all other applicable laws. • MassDOT/MBTA will contact the Toxic Reduction and Control (TRAC) Department to obtain an inspection for each facility prior to obtaining approval from MWRA and the Local Plumbing Inspector. • MassDOT will continue coordination with all relevant parties and agencies in advancing the USPS relocation and other relevant transportation improvements in the Waterfront area.

Environmental Resource	Potential Impacts of the Build Alternative	Proposed Mitigation
		• MassDOT/MBTA will continue to coordinate with Fidelity Investments throughout the next stages of design to: 1) review loading dock operations at 245 Summer Street; 2) discuss the reopening of Dorchester Avenue and any necessary removal of Fidelity's patio and adjacent subsurface elements; 3) discuss maintaining points of egress during construction; 4) discuss design of the noise wall; 5) develop a more detailed geotechnical analysis of the South Station and USPS sites; and 6) develop a construction management plan (CMP) for the reconstruction of the portion of the seawall along Dorchester Avenue. • MassDOT/MBTA will continue to coordinate with the City to help realize a future development vision for both South Station and Widett Circle during construction.

The Build Alternative was selected among several considered alternatives as it best meets the project's Purpose and Need, and goals and objectives. The Build Alternative would expand the South Station Terminal, adding seven new tracks and four new platforms, upgrading the station area at the existing South Station Transportation Center, and increasing capacity at two layover facilities, Widett Circle and an expanded Readville – Yard 2. The Build Alternative includes the following:

- **Acquire and Demolish the USPS Facility:** Includes acquiring the USPS property and demolishing the USPS GMF located on Dorchester Avenue adjacent to South Station, which would provide an approximately 14-acre site on which to expand South Station.
- **Reopen Dorchester Avenue and Extend the Harborwalk:** Restores approximately 0.5 miles of Dorchester Avenue (which is currently closed off for USPS operations only) for public use and for station access, and reconnects Summer Street to the South Boston area. Includes landscaping and improved pedestrian and cycling connections and facilities, including adjacent sidewalks and crosswalks, and construction of a 0.5-mile extension of the Harborwalk.
- **Expand the South Station Terminal:** Includes adding seven new tracks and four platforms for a total of 20 tracks and 11 platforms; reconfiguring several existing tracks and platforms; upgrading existing rail infrastructure, including interlockings; adding an expanded headhouse; and adding a mid-platform elevated concourse.
- **Construct Rail Layover Facilities:** Provides layover space by constructing a new facility at Widett Circle and expanding the existing Readville – Yard 2 MBTA layover facility to meet layover facility program needs and operational requirements.[2]

[2] BPY in Allston, previously identified as a third layover facility alternative in the DEIR, is now subject to environmental review as part of the I-90 Allston project (EEA No. 15278). The I-90 project is further refining the concept design and environmental evaluation of BPY, which is occurring concurrently with the SSX project.

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Chapter 7 – Distribution List

7.1. Federal Agencies and Elected Officials

Senator Edward Markey
975 JFK Federal Building
15 New Sudbury Street
Boston, MA 02203

Senator Elizabeth Warren
2400 JFK Federal Building
15 New Sudbury Street
Boston, MA 02203

Congressman Michael Capuano
110 First Street
Cambridge, MA 02141

Congressman Stephen Lynch
One Harbor Street, Suite 304
Boston, MA 02210

Congressman Seth Moulton
21 Front Street
Salem, MA 01970

Advisory Council on Historic Preservation
Attn: John Fowler, Executive Director
401 F Street NW, Suite 308
Washington, DC 20001-2637

Principal Deputy Assistant Secretary of Defense
for Energy, Installations, and Environment
Attn: Addison Davis
3400 Defense Pentagon – Room 5C646
Washington, DC 20301-3400

Federal Emergency Management Agency
Attn: Paul Ford, Acting Regional Administrator
Region 1, 99 High Street
Boston, MA 02110

National Park Service
Attn: Gay Vietzke, Regional Director
U.S. Custom House
200 Chestnut Street, 5th Floor
Philadelphia, PA 19106

National Railroad Passenger Corporation (Amtrak)
Attn: Rina Cutler, Senior Director, Major Stations Planning & Development
2955 Market Street, Office 3N-192
Philadelphia, PA 19104

National Railroad Passenger Corporation (Amtrak)
Attn: Anthony DeDominicis, Senior Manager, Stations and Facilities Planning
2955 Market Street, Office 3N-194
Philadelphia, PA 19104

National Railroad Passenger Corporation (Amtrak)
NEC Infrastructure and Business Development
Attn: Thomas Moritz, Director Business Development
2955 Market Street, Office 4N-166
Philadelphia, PA 19104

National Railroad Passenger Corporation (Amtrak)
Attn: Paul O'Mara, Deputy General Manager for New England Operations
2 South Station, 5th Floor
Boston, MA 02110

National Railroad Passenger Corporation (Amtrak)
Attn: Vanessa Stolzoff, NE Infrastructure Planning Manager
2 South Station, 5th Floor
Boston, MA 02110

United States Army Corps of Engineers
Attn: Colonel William M. Conde, Commander
New England District
696 Virginia Road
Concord, MA 01742-2751

United States Department of the Interior
Attn: Michaela E. Noble, Director
Office of Environmental Policy and Compliance
1849 C Street, NW (MS 5538-MIB)
Washington, DC 20240

United States Department of the Interior
Attn: Andrew L. Raddant, Regional Environmental Officer
Office of Environmental Policy and Compliance Northeast Region
15 State Street, Suite 400
Boston, MA 02109

United States Department of Transportation
Federal Aviation Administration
Attn: Amy Lind Corbett, Regional Administrator
New England Region
1200 District Avenue
Burlington, MA 01803-5299

United States Department of Transportation
Federal Highway Administration
Massachusetts Division
Attn: Jeff McEwen, Division Administrator
55 Broadway, 10th Floor
Cambridge, MA 02142

United States Department of Transportation
Federal Railroad Administration
Attn: Amishi Castelli Ph.D., Environmental Protection Specialist
Office of Program Delivery, Environment and Corridor Planning Division (RPD-13)
One Bowling Green, Suite 429
New York, NY 10004-1415

United States Department of Transportation
Attn: Grover Burthey, Deputy Assistant Secretary for Transportation Policy
1200 New Jersey Avenue SE
Washington, DC 20590

United States Department of Transportation
Federal Transit Administration
Attn: Mary Beth Mello, Regional Administrator, Region 1 Office
Transportation Systems Center, Kendall Square
55 Broadway, Suite 920
Cambridge, MA 02142-1093

United States Environmental Protection Agency
Region 1 – New England
Attn: Timothy L. Timmerman, Associate Director, Office of Environmental Review
5 Post Office Square, Suite 100 (Mail Code: ORA17-1)
Boston, MA 02109-3912

United States Fish and Wildlife Service
Attn: Tom Chapman, Supervisor
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087

United States Postal Service
Attn: John W. O'Connell, Manager, Maintenance Engineering Support
25 Dorchester Avenue, Room B-41
Boston, MA 02205

United States Postal Service
Attn: Tom Samra, Vice President of Facilities
4301 Wilson Boulevard, Suite 300
Arlington, VA 22203-1861

United States Postal Service
Attn: Davon Michael Collins, Environmental Counsel, Procurement and Property Law
475 L'Enfant Plaza SW, Office 6333
Washington, DC 20260-1101

7.2. Tribal Nations

Ramona Peters
Tribal Historic Preservation Officer
Mashpee Wampanoag Tribe
483 Great Neck Road South
Mashpee, MA 02649

Bettina Washington
Tribal Historic Preservation Officer
Wampanoag Tribe of Gay Head/Aquinnah
20 Black Brook Road
Aquinnah, MA 02535

7.3. State and Regional Agencies, and Elected Officials

Senator Stanley C. Rosenberg, President
State House, Room 332
Boston, MA 02133

Senator William Brownsberger
State House, Room 504
Boston, MA 02133

Senator Sonia Chang-Diaz
State House, Room 111
Boston, MA 02133

Senator Eileen M. Donoghue
State House, Room 112
Boston, MA 02133

Senator Linda Dorcena Forry
State House, Room 410
Boston, MA 02133

Senator Patricia Jehlen
Co-Chair, MBTA Caucus
State House, Room 424
Boston, MA 02133

Senator Thomas M. McGee
State House, Room 109C
Boston, MA 02133

Senator Michael Rush
State House, Room 511C
Boston, MA 02133

Senator Bruce E. Tarr
State House, Room 308
Boston, MA 02133

Speaker Robert A. DeLeo
State House, Room 356
Boston, MA 02133

Representative Nick Collins
State House, Room 39
Boston, MA 02133

Representative Sean Garballey
Co-Chair, MBTA Caucus
State House, Room 540
Boston, MA 02133

Representative Kevin Honan
State House, Room 38
Boston, MA 02133

Representative Jay Livingstone
State House, Room 136
Boston, MA 02133

Representative Aaron Michlewitz
State House, Room 254
Boston, MA 02133

Representative Michael J. Moran
State House, Room 42
Boston, MA 02133

Representative Angelo Scaccia
State House, Room 33
Boston, MA 02133

Representative Frank I. Smizik
State House, Room 274
Boston, MA 02133-1054

Representative William Straus
State House, Room 134
Boston, MA 02133

Representative Mike Connolly
State House, Room 437
Boston, MA 02133

Massachusetts Bay Transportation Authority
Attn: Andrew Brennan
10 Park Plaza, 6th Floor
Boston, MA 02216-3966

Massachusetts Commission on Indian Affairs
Attn: John Peters Jr., Executive Director
100 Cambridge Street, Suite 300
Boston, MA 02114

Massachusetts Convention Center Authority
Attn: David Gibbons, Executive Director
415 Summer Street
Boston, MA 02210

Massachusetts Department of Conservation and Recreation
Attn: NEPA Reviewer
251 Causeway Street, Suite 900
Boston, MA 02114

Massachusetts Department of Energy Resources
Attn: Judith Judson, Commissioner
100 Cambridge Street, Suite 1020
Boston, MA 02114

Massachusetts Department of Energy Resources
Attn: NEPA Reviewer
100 Cambridge Street, 10th Floor
Boston, MA 02114

Massachusetts Department of Environmental Protection
Attn: Martin Suuberg, Commissioner
1 Winter Street
Boston, MA 02108

Massachusetts Department of Environmental Protection
Attn: John D. Viola, Assistant Commissioner
1 Winter Street
Boston, MA 02108

Massachusetts Department of Environmental Protection
Northeast Regional Office
Attn: Nancy Baker, Environmental/MEPA Analyst
205B Lowell Street
Wilmington, MA 01887

Massachusetts Department of Environmental Protection
Attn: NEPA Reviewer
1 Winter Street
Boston, MA 02108

Massachusetts Department of Environmental Protection
Attn: Jerome Grafe, Waterways Program
1 Winter Street
Boston, MA 02108

Massachusetts Department of Environmental Protection
Attn: Christine Kirby, Assistant Commissioner, Bureau of Air & Waste
1 Winter Street
Boston, MA 02108

Massachusetts Department of Public Utilities
Attn: NEPA Reviewer
One South Station
Boston, MA 02110

Massachusetts Department of Transportation
Highway Division District 6
Attn: John McInerney, Acting Director
185 Kneeland Street
Boston, MA 02111

Massachusetts Department of Transportation - Highway Division Office
of Project Controls & Performance Oversight
Attn: Isidoro Perez, Deputy Administrator
10 Park Plaza, Suite 4160
Boston, MA 02116

Massachusetts Division of Marine Fisheries
Attn: MEPA Coordinator
251 Causeway Street, Suite 400
Boston, MA 02114

Massachusetts Executive Office of Energy and Environmental Affairs
Attn: Matthew Beaton, Secretary
100 Cambridge Street, Suite 900
Boston, MA 02114

Massachusetts Executive Office of Housing and Economic
Development Attn: Jay Ash, Secretary
1 Ashburton Place, Room 2101
Boston, MA 02108

Massachusetts Executive Office of Labor and Workforce Development
Attn: Rosalin Acosta, Secretary
1 Ashburton Place, Suite 2112
Boston, MA 02108

Massachusetts Historical Commission
Attn: Brona Simon, State Historic Preservation Officer, Executive Director
The MA Archives Building
220 Morrissey Boulevard
Boston, MA 02125-3314

Massachusetts Office of Coastal Zone Management
Attn: Bruce Carlisle, Director
251 Causeway Street, Suite 800
Boston, MA 02114-2136

Massachusetts Port Authority
Attn: Stewart Dalzell, Deputy Director, Environmental Planning and Permitting
One Harborside Drive, Suite 200S
East Boston, MA 02128-2909

Massachusetts Water Resources Authority
Attn: Marianne Connolly, Senior Program Manager
Environmental Review and Compliance
Charlestown Navy Yard
100 First Ave, Building 39
Boston, MA 02129

Metropolitan Area Planning Council
Attn: Eric Bourassa, Transportation Director
60 Temple Place, 6th Floor
Boston, MA 02111

7.4. Local Agencies and Elected Officials

Mayor Martin J. Walsh
1 City Hall Square, Suite 500
Boston, MA 02201-2043

Michelle Wu, President
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Frank Baker
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Andrea Joy Campbell
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Mark Ciommo
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Michael Flaherty
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Annissa E. George
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Tito Jackson
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Salvatore LaMattina
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Bill Linehan
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Timothy McCarthy
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Matt O'Malley
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Ayanna Pressley
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Josh Zakim
Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Boston Conservation Commission
Attn: Charlotte Moffat, Executive Secretary
1 City Hall Square, Room 801
Boston, MA 02201

Boston Environment Department
Attn: Austin Blackmon, Chief of Environment, Energy and Open Space
1 City Hall Square, Room 709
Boston, MA 02201

Boston Landmarks Commission
Attn: Roseanne Foley, Executive Director
1 City Hall Square
Boston, MA 02201

Boston Mayor's Office
Attn: Chris Osgood, Chief of Streets, Transportation, & Sanitation
1 City Hall Square, 5th Floor
Boston, MA 02201

Boston Public Health Commission
Attn: Monica Valdes Lupi, Executive Director
1010 Massachusetts Avenue, Main Office
Boston, MA 02118

Boston Public Works Department
Attn: Chris Osgood, Acting Commissioner
1 City Hall Square, Room 801
Boston, MA 02201

Boston Planning and Development Authority
Attn: Sara Myerson, Director of Planning
1 City Hall Square
Boston, MA 02201

Boston Transportation Department
Attn: Gina Fiandaca, Commissioner
1 City Hall Square
Boston, MA 02201

Boston Water and Sewer Commission
Attn: John P. Sullivan, P.E., Chief Engineer
980 Harrison Avenue
Boston, MA 02119

City of Cambridge
Attn: Louis DePasquale, City Manager
795 Massachusetts Avenue
Cambridge, MA 02139

Fort Point Channel Landmark District Commission
1 City Hall Square, Room 709
Boston, MA 02201

7.5. Other Interested Stakeholders

Keolis Commuter Services
Attn: David Scorey, General Manager
470 Atlantic Avenue
Boston, MA 02210

Boston Harbor Now
Attn: Kathy Abbott, President/CEO
15 State Street, Suite 1100
Boston, MA 02109

Boston Preservation Alliance
Attn: Greg Galer, Executive Director
Old City Hall
141 Cambridge Street
Boston, MA 02114

Preservation Massachusetts
Attn: James Igoe, President
34 Main Street Extension
Plymouth, MA 02360

Save the Harbor/Save the Bay
Attn: Patty Foley, President
212 Northern Avenue, Suite 304 West
Boston, MA 02210

WalkBoston
Attn: Wendy Landman, Executive Director
45 School Street
Boston, MA 02108

7.6. Libraries

City of Boston Public Library
Central Branch
700 Boylston Street
Boston, MA 02116

City of Boston Public Library
Honan-Allston Branch
300 North Harvard Street
Allston, MA 02134

City of Boston Public Library
Hyde Park Branch
35 Harvard Avenue
Hyde Park, MA 02136

City of Boston Public Library
South Boston Branch
646 East Broadway
South Boston, MA 02127

State Library of Massachusetts
24 Beacon Street
State House, Room 341
Boston, MA 02133

State Transportation Library of Massachusetts
10 Park Plaza
Boston, MA 02116

Acronyms

ACEC	—	Area of Critical Environmental Concern
ACM	—	Asbestos Containing Materials
ADA	—	Americans with Disabilities Act
Amtrak	—	National Railroad Passenger Corporation
APE	—	Area of Potential Effect
APS	—	Accessible Pedestrian Signals
APTA	—	American Public Transportation Association
AREMA	—	American Railway Engineering and Maintenance-of-Way Association
AUL	—	Activity and Use Limitation
BFE	—	Base Flood Elevation
BH-FRM	—	Boston Harbor Flood Risk Model
BLC	—	Boston Landmarks Commission
BMPs	—	Best Management Practices
BPDA	—	Boston Planning and Development Agency
BPRD	—	Boston Parks and Recreation Department
BPY	—	Beacon Park Yard
BRA	—	Boston Redevelopment Authority
BRT	—	Bus Rapid Transit
BTD	—	Boston Transportation Department
BWSC	—	Boston Water and Sewer Commission
CAA	—	U.S. Clean Air Act
CAAA	—	Clean Air Act Amendments
CA/T	—	Central Artery/Tunnel
CEQ	—	Council on Environmental Quality
CFEP	—	Coastal Flood Exceedance Probability
CFR	—	Code of Federal Regulations
CHP	—	Combined Heat and Power
CH_4	—	Methane
CMP	—	Construction Management Plan
CMR	—	Code of Massachusetts Regulations
CO	—	Carbon monoxide
CO_2	—	Carbon dioxide
CO_{2e}	—	Carbon dioxide equivalent
CSO	—	Combined Sewer Overflow
CSXT	—	CSX Transportation, Inc.
CTPS	—	Central Transportation Planning Staff
CWMP	—	Construction Waste Management Plan
CZM	—	Coastal Zone Management
dBA	—	A-weighted Decibels

DEIR	—	Draft Environmental Impact Report
DCR	—	Department of Conservation and Recreation
DDT	—	Dichloro-diphenyl-trichloroethane
DPM	—	Diesel Particulate Matter
EA	—	Environmental Assessment
EEA	—	Executive Office of Energy and Environmental Affairs
EIS	—	Environmental Impact Statement
EJ	—	Environmental Justice
ENF	—	Environmental Notification Form
ESA	—	Environmental Site Assessment
FAA	—	Federal Aviation Administration
FEIR	—	Final Environmental Impact Report
FEIS	—	Final Environmental Impact Statement
FEMA	—	Federal Emergency Management Agency
FHWA	—	Federal Highway Administration
FIRM	—	Flood Insurance Rate Map
FONSI	—	Finding of No Significant Impact
FR	—	Federal Register
FRA	—	Federal Railroad Administration
FTA	—	Federal Transit Administration
FY	—	Fiscal Year
GDP	—	Gross Domestic Product
GHG	—	Greenhouse Gas
GIS	—	Geographic Information System
GMF	—	General Mail Facility
gpd	—	Gallons per day
GSA	—	General Service Administration
HASP	—	**(**Site Specific) Health and Safety Plan
HREC	—	Historical Recognized Environmental Condition
HSIPR	—	High Speed Intercity Passenger Rail Program
HVAC	—	Heating, Ventilation, and Air Conditioning
I-90	—	Interstate Highway 90/Massachusetts Turnpike
I-90 Project	—	I-90 Allston Interchange Improvement Project
I-93	—	Interstate Highway 93
I/I	—	Infiltration/Inflow
INVEST	—	Infrastructure Voluntary Evaluation Sustainability Tool
L10	—	Noise Level Exceeded 10 Percent of the Time
Ldn	—	24-Hour Day-Night Average Sound Level
LEED	—	Leadership in Energy and Environmental Design
LEP	—	Limited English Proficiency
Leq	—	A-weighted sound level
Leq (h)	—	Hourly equivalent noise level
lf	—	Linear feet
LOS	—	Level of Service

LPA	—	Locally Preferred Alternative
LRTP	—	Long Range Transportation Plan
LSCSF	—	Land Subject to Coastal Storm Flowage
LSP	—	Licensed Site Professional
MAAB	—	Massachusetts Architectural Access Board
MAAQS	—	Massachusetts Ambient Air Quality Standards
MACRIS	—	Massachusetts Cultural Resource Information System
MassDCR	—	Massachusetts Department of Conservation and Recreation
MassDEP	—	Massachusetts Department of Environmental Protection
MassDOS	—	Massachusetts Division of Occupational Safety
MassDOT	—	Massachusetts Department of Transportation
MassGIS	—	Massachusetts Office of Geographic Information
Massport	—	Massachusetts Port Authority
MBTA	—	Massachusetts Bay Transportation Authority
MCP	—	Massachusetts Contingency Plan
MEPA	—	Massachusetts Environmental Policy Act
M.G.L.	—	Massachusetts General Law
MHC	—	Massachusetts Historical Commission
MPO	—	Metropolitan Planning Organization
MSATs	—	Mobile Source Air Toxics
MWRA	—	Massachusetts Water Resources Authority
N_2O	—	Nitrous Oxide
NAAQS	—	National Ambient Air Quality Standards
NAVD 88	—	North American Vertical Datum of 1988
NEC	—	Northeast Corridor
NEPA	—	National Environmental Policy Act
NESHAP	—	National Emission Standards for Hazardous Air Pollutants
NFIP	—	National Flood Insurance Program
NFPA	—	National Fire Protection Association
NO_2	—	Nitrogen dioxide
NO_x	—	Oxides of Nitrogen
NOAA	—	National Oceanic and Atmospheric Administration
NOI	—	Notice of Intent
NPDES	—	National Pollutant Discharge Elimination System
NR	—	National Register of Historic Places
NRCS	—	Natural Resources Conservation Service
O&M	—	Operation and Maintenance
O_3	—	Ozone
OCS	—	Overhead Contact System
OHM	—	Oil and/or Hazardous Material
ORWs	—	Outstanding Resource Waters
OSHA	—	Occupational Safety and Health Administration
OTP	—	On-time performance
PAH	—	Polynuclear Aromatic Hydrocarbons

PCB	—	Polychlorinated Biphenyl
PHA	—	Primary Hazard Analysis
PIC	—	Public Improvement Commission
PIP	—	Public Involvement Plan
PL	—	Public Law
$PM_{2.5}$	—	Particulate matter 2.5 microns or less in diameter
PM_{10}	—	Particulate matter 10 microns or less in diameter
ppm	—	Parts per million
PV	—	Photovoltaic
QR	—	Quick Response
RAO	—	Response Action Outcome
REC	—	Recognized Environmental Condition
RR	—	Railroad
RTN	—	Release Tracking Number
RTP	—	Regional Transportation Plan
SDP	—	Service Development Plan
SHPO	—	State Historic Preservation Officer
sf	—	Square feet
SFHA	—	Special Flood Hazard Area
SGR	—	State of Good Repair
SIP	—	State Implementation Plan
SLR	—	Sea Level Rise
SOI	—	Secretary of the Interior
SO_2	—	Sulfur dioxide
SOV	—	Single Occupancy Vehicle
SPPP	—	System Safety Program Plan
SR	—	State Register of Historic Places
SSAR	—	South Station Air Rights
SSP	—	System Safety Program
SSPP	—	Safety and Security Program Plan
SSX	—	South Station Expansion
SWPPP	—	Stormwater Pollution Prevention Plan
TAZ	—	Transportation Analysis Zone
TDM	—	Transportation Demand Management
THPO	—	Tribal Historic Preservation Officer
TMDL	—	Total Maximum Daily Load
tpy	—	Tons per year
TREDIS	—	Transportation Economic Development Impact System
TSS	—	Total Suspended Solids
TUDC	—	Tufts University Development Corporation
TVA	—	Threat and Vulnerability Assessment
UFP	—	Ultrafine Particulate
URAM	—	Utility Release Abatement Measure
U.S. ACE	—	United States Army Corp of Engineers

U.S. DOT	—	United States Department of Transportation
U.S. DOT Act	—	United States Department of Transportation Act
U.S. EPA	—	United States Environmental Protection Agency
U.S. FWS	—	United States Fish and Wildlife Service
U.S.C.	—	United States Code
USDA	—	United States Department of Agriculture
USPS	—	United States Postal Service
VdB	—	Vibration Decibels
VHT	—	Vehicle Hours Traveled
VMT	—	Vehicle Miles Traveled
VOCs	—	Volatile Organic Compounds
WPA	—	Massachusetts Wetlands Protection Act

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Appendix A – Station Headhouse Alternatives Analysis

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SOUTH STATION
EXPANSION

South Station Expansion Project
Environmental Assessment and
Section 4(f) Determination

Appendix A – Station Headhouse Alternatives Analysis

September 2017

massDOT
Massachusetts Department of Transportation

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Federal Railroad Administration

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1. Introduction

The purpose of this technical report is to discuss the alternatives considered for the expansion of the South Station headhouse facility. This report presents the option selected by MassDOT to advance for further evaluation.

A key objective of the South Station Expansion project (SSX) is blending the future station expansion with the existing station while creating an integrated facility that improves multimodal links and transfers for all users. MassDOT established a series of design principles for the South Station headhouse expansion, addressing planning and urban design, station architecture, access and connectivity, and historic preservation. Initial unconstrained concepts included expanding the South Station footprint to include the USPS facility site and 245 Summer Street, as well as relocating or significantly altering the South Station Air Rights (SSAR) project.[1] These concepts were rejected due to the substantial impact to existing infrastructure. MassDOT also considered various joint development scenarios for South Station. The station design selected as part of the Build Alternative, evaluated in the DEIR dated October 2014, includes an expanded headhouse located along Dorchester Avenue, comprised of a new trackhead concourse, a new elevated concourse, and emergency egress elements. Although MassDOT did not select a Build Alternative with joint development, the design of the expanded headhouse and terminal will not preclude, and to the extent practicable will support, private transit-oriented development in the future. As the SSAR project is considered an existing condition for the SSX project, the analysis also examined how the rail transportation expansion is integrated with the SSAR project to realize a coherent and functional multimodal integrated station for bus, rail, subway, and intercity patrons at South Station. The ultimate goal of the expanded headhouse is to build upon the landmark that is South Station to create a safer, comfortable, efficient, and attractive rail terminal.

2. The Site

The study area is bordered to the north by Summer Street, to the south by the I-90 Central Artery/Tunnel Vent Building and Tower 1 Interlocking in the rail yard, and spans west-to-east between Atlantic Avenue and the Fort Point Channel seawall, including Dorchester Avenue, as shown on Figure 1.

This Alternatives Analysis for the station expansion takes into consideration the existing and anticipated passenger circulation paths within and around the station; existing connections to the station headhouse and between MBTA rail, bus, and subway facilities; existing and anticipated passenger circulation paths between the rail station and bus facility and its proposed expansion; existing and anticipated passenger circulation paths between the rail station and the office building at 245 Summer Street; and integration with the urban context surrounding South Station with the station facilities. Also considered is the SSAR project, approved in 2006 by the Secretary of Energy and Environmental Affairs, but not yet constructed.

[1] The SSAR project was approved by the Secretary of Energy and Environmental Affairs in 2006. Commonwealth of Massachusetts, Executive Office of Environmental Affairs, Certificate of the Secretary of Environmental Affairs on the Final Environmental Impact Report. South Station Air Rights. April 14, 2006. A Certificate on a Notice of Project Change for the SSAR Project was issued by the Secretary on October 7, 2016.

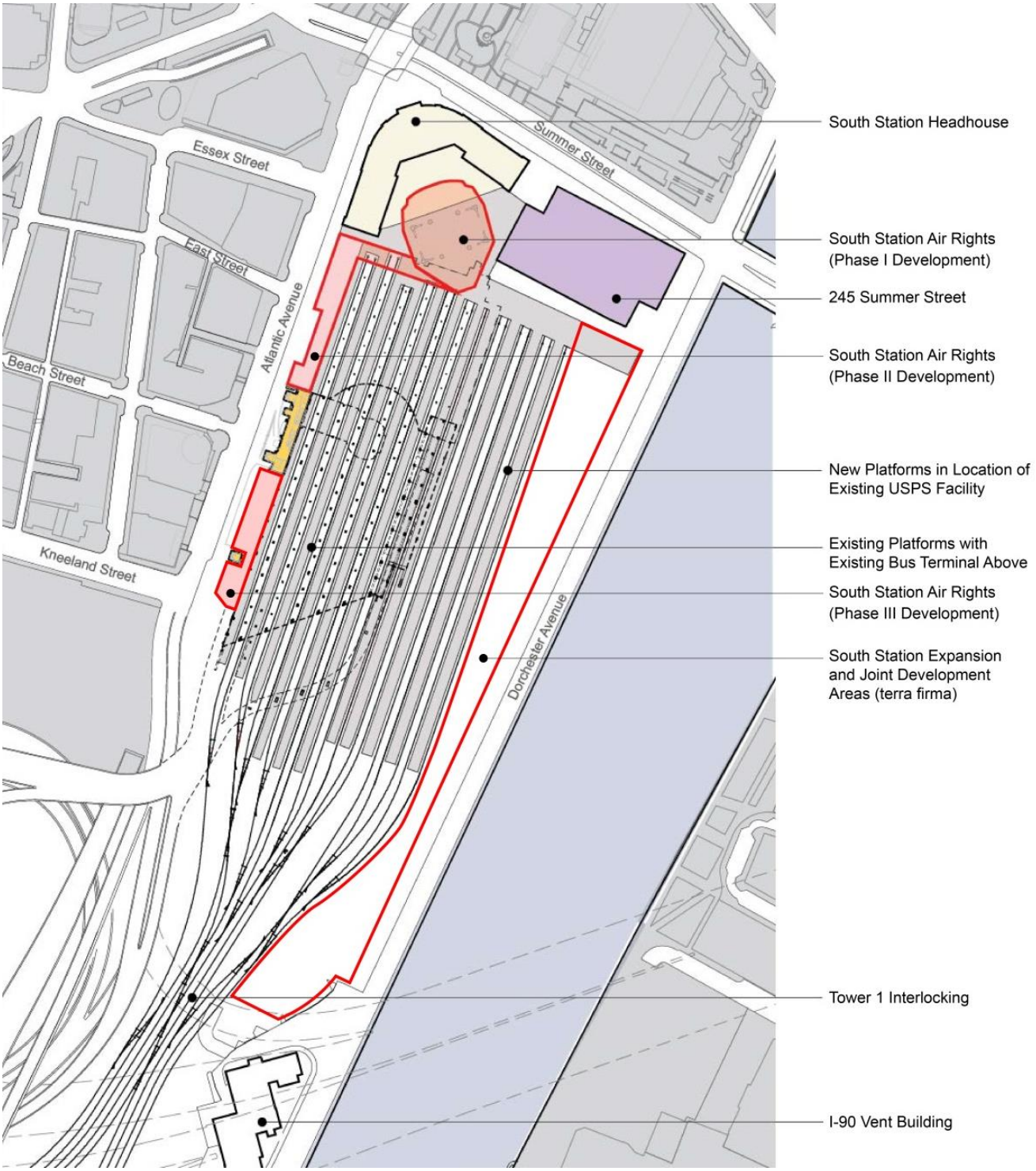


Figure 1 – Future Site Plan

3. Current Constraints and Needs

3.1. Inadequate Station Facilities

The passenger waiting area and circulation zone within the South Station headhouse is an area of approximately 15,000 net square feet. It is inadequately sized and configured to accommodate the daily demand of approximately 100,000 passengers and visitors to the station. The insufficient and awkward headhouse space results in a poor passenger experience, especially during peak-period train boarding and alighting when passengers and pedestrians are crowded together and their movements are obstructed. The current configuration of the concourse forces passenger queues to overlap and lacks easy and intuitive connections among the various intercity rail, commuter rail, bus service, and transit services available at the station. In addition, many of the current passenger amenities at South Station are obsolete and do not meet the standards for a modern passenger rail facility.

3.2. Platform Deficiencies

Last upgraded approximately 30 years ago, the South Station platforms are inadequate to handle existing service needs. The northern and southern portions of the station's platforms are exposed to the elements, forcing riders to walk through rain, snow, sleet and cold/hot temperatures to reach their trains, as shown on Figure 2. Existing platform lengths do not meet berthing requirements for either MBTA or Amtrak for its high speed rail train sets (to meet projected future demand). Additionally, upgrades are required to stay current with Americans with Disabilities Act (ADA) and life safety regulations, including National Fire Protection Association (NFPA) 130.

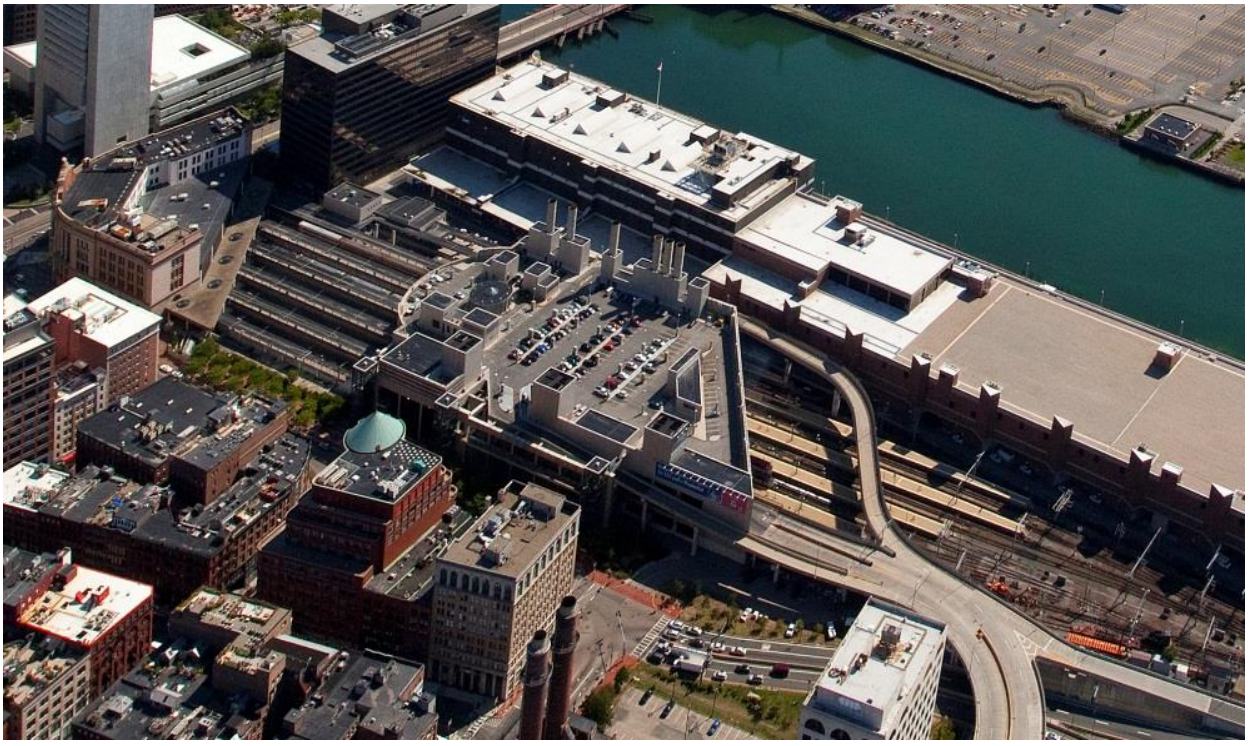


Figure 2 – Aerial Photograph of Open Platforms at South Station

3.3. Future Passenger Service Needs

For the Build Alternative in 2035, Amtrak's and the MBTA's future service increases will nearly double, resulting in a total of 198,000 passengers per day to an already congested South Station. To remedy the existing public space deficit and to accommodate the future increase in service, additional platform, public circulation, and waiting area space is required. These passenger-focused facilities would include comfortable seating and generous waiting space, vertical circulation with direct access to track level, numerous monitor screens providing up-to-the minute arrival and departure information, wireless internet, charging stations for personal devices, quality food and beverage options, as well as retail and entertainment offerings. Platform improvements will include wider and longer new platforms and resurfaced existing platforms, incorporating emergency egress requirements. The ability of South Station to meet passenger needs and comfort expectations associated with a modern intermodal and multimodal transportation center is important to ensuring that rail travel along the NEC remains a viable and attractive alternative to air, bus, and automobile travel.

3.4. South Station Air Rights Project

The Station Headhouse Alternatives Analysis incorporates the SSAR project as planned, with Phase I (Tower) to be located directly behind/above the existing South Station headhouse and its entrance to be located along Atlantic Avenue. The project also includes an expansion of the existing bus terminal and the existing parking garage towards the South Station headhouse. SSAR phases II and III will be developed above the bus terminal expansion and existing bus terminal, respectively. Integrating the SSX project with the SSAR project presents design challenges that are being addressed, but nevertheless compromise the optimal design for the SSX project. The first challenge lies in integrating the tower's columns located at the trackhead into the increased passenger circulation flow between the historic headhouse's Great Hall and the east-west trackhead concourse to be connected to the new island platforms. Ideally, the trackhead would be free of all circulation impediments and provide an area for free flowing passenger movement. While the SSAR project offers a wider platform, the location of the SSAR tower columns and vertical circulation elements (VCEs) to the bus terminal inhibits the SSX project from providing the optimal free-flowing passenger movement. The other significant challenge relates to the potential impact to light and air (platform ventilation) resulting from the overbuild construction above the northern end of existing open-air platforms, approximately 300-ft plus in length. As planned, the SSAR project's bus facility expansion essentially will create an overhead enclosure. Both of these issues are being discussed with the SSAR project team as the design of both projects advances.

4. The Vision

By expanding and improving South Station, MassDOT intends to create a safe, attractive, and comfortable transportation facility, one that fully integrates passenger rail, public transit, well-designed bike/pedestrian facilities, and curbside pick-up and drop-off.

This new vision for the station emphasizes convenient and comfortable passenger waiting areas with height, natural light, clear lines of sight and easy orientation, and view corridors to Fort Point Channel and the urban neighborhoods beyond. More broadly, MassDOT envisions an expanded South Station that is linked – physically and visually – to the waterfront via Dorchester Avenue (currently closed to the public) and an extension of the Harborwalk.

The vision for the future of South Station and the surrounding areas will be realized by:

- Creating an identifiable and compelling sense of place that celebrates Boston's unique character, culture, and history;

- Using design to capture the unique character of South Station as a waterfront intermodal station in the heart of the city;
- Maximizing South Station's strategic location with direct connections to Boston's Financial District and core transportation infrastructure;
- Creating a contemporary and innovative intermodal facility that meets future transportation goals for rail capacity and on-time performance;
- Incorporating sustainable design and technical innovation to develop South Station into a national model for customer service, convenience, safety, and security; and
- Providing pedestrian, bicycle, and vehicular facility improvements in and around South Station.

The key components of the plan for the expansion of South Station are:

- Opening of Dorchester Avenue to vehicular, bicycle, and pedestrian traffic with access to Fort Point Channel waterfront via a new segment of the Boston Harborwalk;
- Terminal expansion to improve the passenger experience at South Station;
- Updated infrastructure (track and signals) and layover capacity;
- Optimized rail capacity for Amtrak intercity passenger rail service;
- Addition of seven new tracks and four island platforms at the current USPS facility site;
- Improved pedestrian/passenger level-of-service (LOS), including additional accessibility and life safety upgrades;
- An elevated passenger concourse with direct track access to provide for more waiting areas, retail space, and passenger amenities, and to facilitate a more organized boarding process;
- Additional entrances and exits into South Station and enhanced connectivity to the surrounding communities;
- Mid-platform boarding opportunities for passenger convenience, circulation, and safety;
- Incorporation of the proposed SSAR project (pre-existing and separate from the SSX project) and bus facility expansion; and
- Enhanced connections to MBTA rapid transit services and intercity/regional bus services.

5. Station Alternatives

The station conceptual design alternatives for the expansion of South Station, as shown on Figure 3, were developed to evaluate the physical, contextual, and architectural impacts of different alternatives to existing or proposed facilities within the project area. Each scenario looks at the various opportunities in conjunction with accompanying constraints related to passenger amenities and experience, passenger flow, passenger level-of-service (LOS), existing structure and infrastructure, concourse expansion, and intermodal connections. The ventilation strategy involves a highly complex engineering analysis supported by computer modeling. For the alternatives analysis, best practice assumptions are being applied to these station concept scenarios so as not to preclude additional air shafts, openings through structures to reach open air while preserving zones of space for necessary mechanical ventilation fan plants. Ventilation will be a qualitative evaluation for the reasons mentioned.

In addition, each scenario looked at the concepts for manifesting a project vision in concert with the opportunities and impacts to potential future overbuild. The assessment provides a qualitative view to provide a strategic design framework for the future overbuild potential within an overall conceptual design for the station alternatives.

The alternatives evaluation began with these three station scenarios to illustrate the design opportunities and highlight the primary planning constraints.

- **Scenario 1: Base Condition – Single-Level Concourse**, consisting of single-level boarding/ alighting platforms utilizing the main headhouse/Dewey Square entrance with side entrances to Atlantic and Dorchester Avenues.
- **Scenario 2: Functional Concourses**, consisting of bridges located above platforms and connected to a station expansion with a Dorchester Avenue station entrance. Additional station entrances are provided along Atlantic Avenue from the concourse bridges.
- **Scenario 3: Diagonal Concourses**, consisting of bridges located above platforms and connected to a station expansion with a Dorchester Avenue station entrance. Additional station entrances are provided along Atlantic Avenue from the concourse bridges.

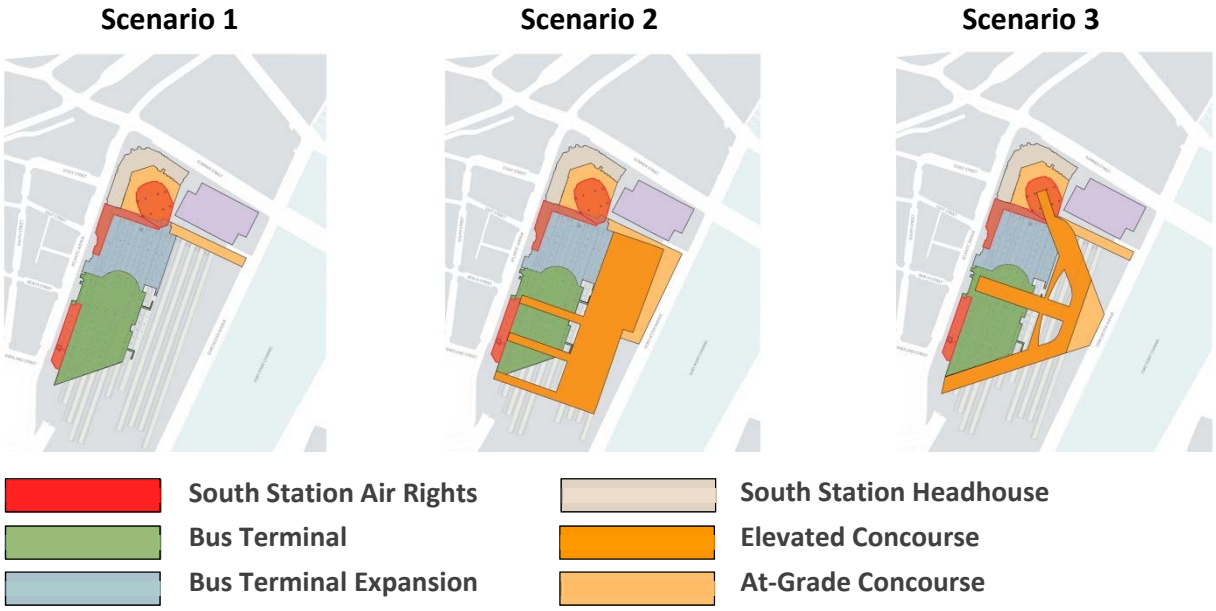


Figure 3 – Station Alternatives for South Station Expansion

5.1. Scenario 1 – Base Condition – Single-Level Concourse

Scenario 1 represents the base condition where the SSAR project proceeds as planned. As described in Section 3.4, the presence of the SSAR project presents some design challenges and potential adverse impacts in this scenario as well as in Scenarios 2 and 3.

In Scenario 1, the expanded South Station consists of an entirely single-level station for boarding and alighting from the trains through the trackhead – similar to the current day configuration. This aspect is unique to Scenario 1, however, it has its advantages and disadvantages. The circulation movements are familiar to current users. The South Station headhouse continues to support and house all the passenger amenities, retail, food and beverage concessions. Where the new 26 foot-wide island platforms and tracks

are added, a 20-foot wide trackhead concourse is provided perpendicular to the platforms to facilitate passenger circulation among headhouse, platforms, and station exits/entrances. Scenario 1 provides for the bus facility expansion and the SSAR project to proceed as planned, as shown on Figure 4. It should be noted that the SSAR Phase 1 development – the tower and bus facility expansion – was planned and designed prior to existence of the SSX project, thus there will be elements constraining the SSX project. This scenario assumes no impact or re-designs to the 2006 proposed construction for the SSAR project.

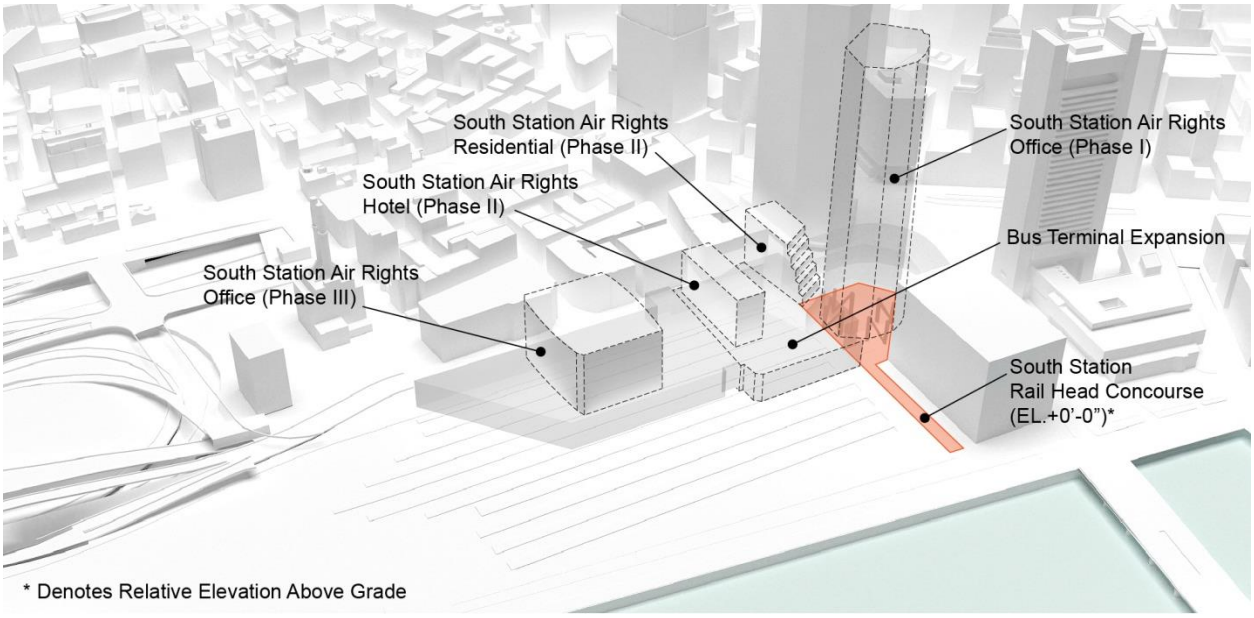


Figure 4 – Scenario 1 – Single-Level Concourse

The constraints in Scenario 1 are a direct result of the cause and effect from the vertical circulation elements (stairs, escalators, and elevator) at the trackhead, the proposed column structures with some located in the trackway requiring shortening of existing tracks, and the emergency egress stair shaft enclosure of the SSAR project Phase I (Tower) located in the concourse. These elements of the SSAR project negatively impact passenger flows and congestion for pedestrians who are moving between bus, rail, and subway services. Where the existing platforms and station meet with the station expansion, the circulation movement occurs at a physically narrow area – a pinch point between existing and new. MassDOT and the MBTA's desired transportation objectives in the expansion of South Station for improved integration of the intermodal connections among rail, bus, and subway services are thus constrained by these elements. In addition, the expansion of the bus facility to the north limits the ability of the South Station concourse to expand in this area. Lastly, in Scenario 1 with the single-level boarding and alighting configuration, it does not comply with NFPA 130 – Standard for Fixed Guideway Transit and Passenger Rail Systems (the reference standard adopted by Massachusetts Building Code for emergency egress compliance). Scenario 1 does not egress or clear the platform in the NFPA 130 required 4-minutes time period. In order to comply, additional exits, stairs and escalators or combination of these vertical circulation elements (VCEs) are required.

Opportunities and constraints are described in the following Sections 5.1.1 and 5.1.2, respectively.

5.1.1. Opportunities

- Provides the shortest passenger connection between the bus concourse and subway entrance at South Station, as shown in Figure 5.

- Provides single-level boarding and alighting from the existing and new platforms, as shown in Figure 6. This aspect is unique to Scenario 1.
- Provides potentially the maximum overbuild opportunities for joint development.

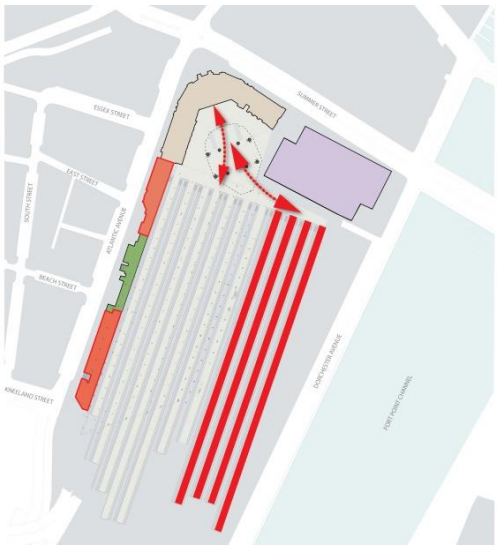


Figure 5 – Passenger Flows between Bus and Subway and from New Platforms

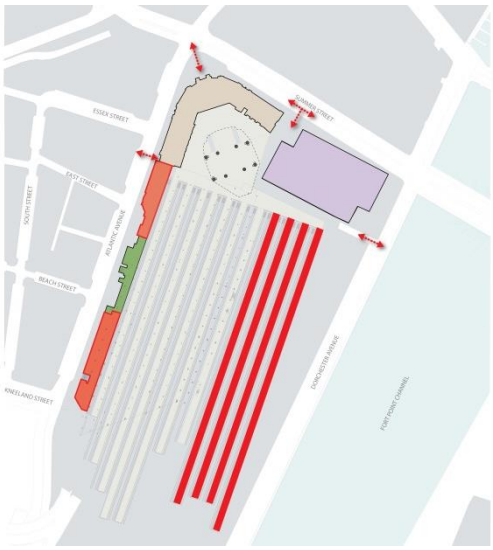


Figure 6 – New 26'-0" Wide Platforms

5.1.2. Constraints

- Locates the connection between bus concourse and subway at a constrained trackhead area of South Station, where the confluence of SSAR tower columns, tower VCEs, rail, bus and egress paths all converge, thus creating a "bottleneck" at rush hour periods, as shown on Figure 7.
- Does not provide for mid-platform boarding for existing platforms.
- Does not provide adequate egress capacity to comply with NFPA 130.
- Inhibits the development of a fully integrated multimodal center; the SSAR tower and bus facility expansion will split the rail station into two segments, as shown on Figure 7, with a passenger hall located adjacent to the South Station headhouse and a new trackhead concourse located behind 245 Summer Street serving the additional platforms in the station expansion.
- Has the minimum potential of the three alternatives in terms of place-making opportunity, which translates to least value on the scale of project vision from a passenger experience and memory, "sense of place" perspective.
- Requires confirmation by the SSAR project approvals and permits from the authority having jurisdiction (AHJ) with respect to fire and life safety issues that there will be no impacts to the SSX Project. SSAR approvals and permits include:
    - Separation and mixing of transit and non-transit spaces;
    - Egress separation;
    - Platform egress compliance;
    - Bus Terminal egress compliance; and
    - Capacity of egress elements.

Figure 7 – South Station Expansion as shown in accordance with the SSAR project

- Requires construction of the following structural systems concurrent with the SSX project to minimize the impact of the SSAR project on the new station and its operation:
    - Vertical support columns and egress stairs for the tower;
    - First parking level above bus expansion; and
    - Parking ramp helix and vehicular entrance on Atlantic Avenue.

5.1.3. Passenger Flow Constraints

- The tower columns and stairs from the SSAR project obstruct effective passenger flows to/from trains, worsening the current passenger congestion at the north end of platforms, as shown on Figure 8.
- Several narrow corridors are created at Platforms D, E, and F due to the egress stair, escalators, and elevators from the bus expansion and SSAR Tower columns. Figure 9 presents a layout of an improved condition with a widened concourse.
- Due to the lack of mid-platform boarding for existing tracks, the existing conflict of passenger boarding and alighting cannot be resolved.
- Due to the tower's egress stair shaft enclosure onto the concourse and its proximity between two of the tower's columns, narrow corridors are created that restrict the flow to/from the new platforms and South Station headhouse, as shown on Figure 9.
- The inadequate capacity and location of circulation between the bus concourse and subway worsen current passenger congestion.

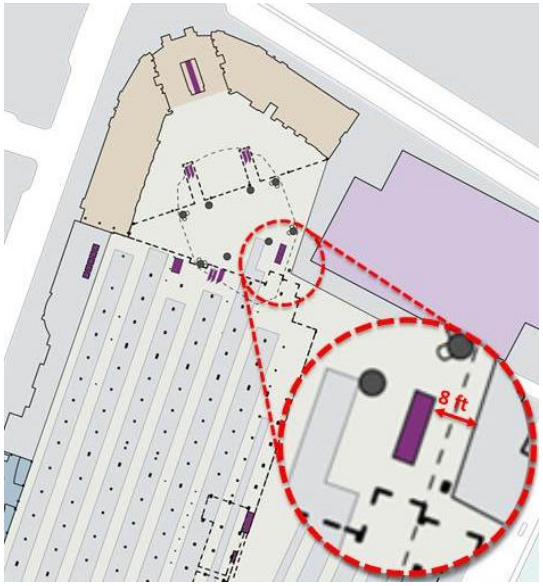


Figure 8 – Passenger Flow from Platform to Headhouse (before Concourse Widening)

Figure 9 – Passenger Flow from Platform to Headhouse (after Concourse Widening)

5.2. Scenario 2 – Functional Concourse

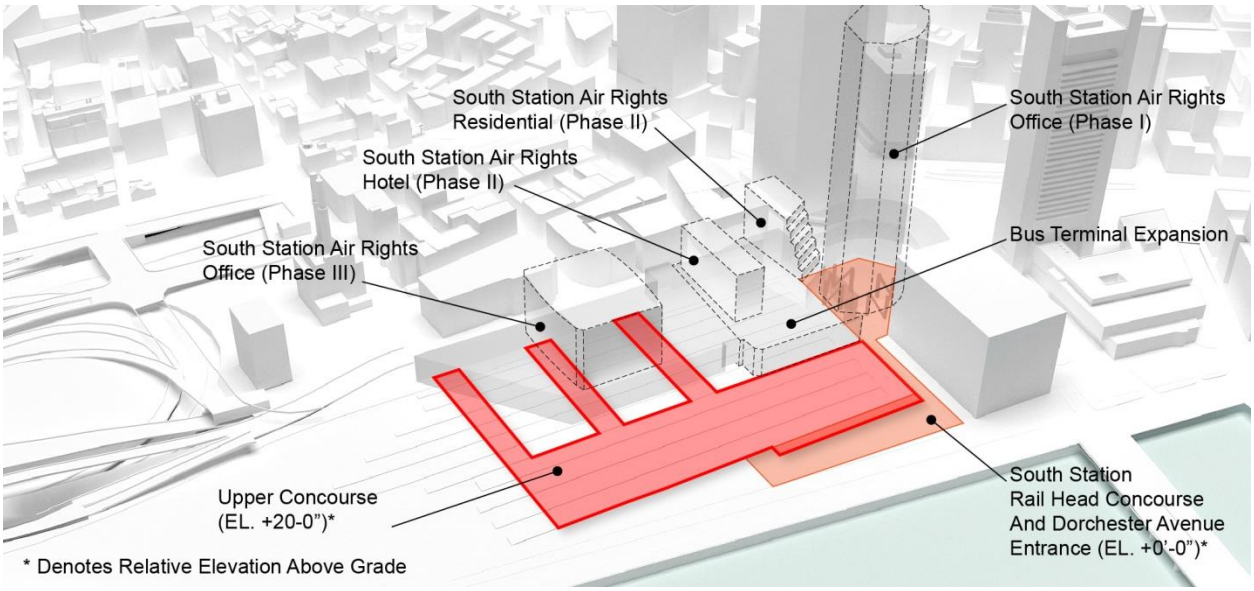


Figure 10 – Scenario 2 – Functional Concourse

This scenario requires no modification by the SSAR project, as the station expansion works around the SSAR project. Scenario 2 provides a new headhouse expansion located along Dorchester Avenue with a major station entrance, in addition to a functional concourse layout deploying three transverse elevated concourses that are arranged perpendicular to the platforms. The station at-grade concourse maintains the existing entry/exit points through South Station headhouse, in addition to providing an additional Dorchester Avenue entrance (adjacent and behind 245 Summer Street) which connects to the proposed trackhead concourse of the station expansion project. Scenario 2 includes connections to the South Station

headhouse and bus facility via the northernmost elevated concourse. The three elevated concourses link with a north-south concourse spine that all connect to the headhouse expansion and back down to the at-grade trackhead concourse. Scenario 2 also provides additional perimeter access with an at-grade connection from the station expansion to a passenger pick-up/drop off area on Dorchester Avenue; and provides at-grade station entrances to Atlantic Avenue from the elevated concourses.

The new elevated concourses would be constructed to bridge all existing and proposed tracks to facilitate separate boarding and alighting operations. Passenger boarding occurs from the concourse above, while alighting occurs at the platform level, thereby reducing passenger flow conflicts and relieving passenger congestion. Similar to Scenario 1, there are negative passenger flow impacts and transportation planning constraints as a result of the planned location and support columns of the SSAR tower. Opportunities and constraints are described in the following sections.

5.2.1. Opportunities

- Moves toward an intermodal connection between bus concourse, rail station, and subway, as the South Station concourse expansion occupies the area west of the bus terminal and the existing platforms and tracks, as shown on Figure 10. The station expansion is the connector in a north-to-south orientation.
- Allows for elevated concourses serving all platforms to relieve the current conflict of passenger flow by separating passengers boarding and alighting the trains, as shown on Figure 11.
- Dedicates passenger flows alighting rail platform directly to street exits, as shown on Figure 12.
- Allows for multiple exits off the platform via concourse bridges to comply with NFPA 130 in clearing the platforms in four minutes or less.
- Reserves a ventilation zone between the bus terminal and Dorchester Avenue side station expansion so as not to preclude mechanical equipment placement, air shafts, and structural penetrations.
- Requires no modification to the existing ventilation system in the existing track and platform areas. The SSAR project provides a ventilation system for the overbuild at the northern ends of the platforms.

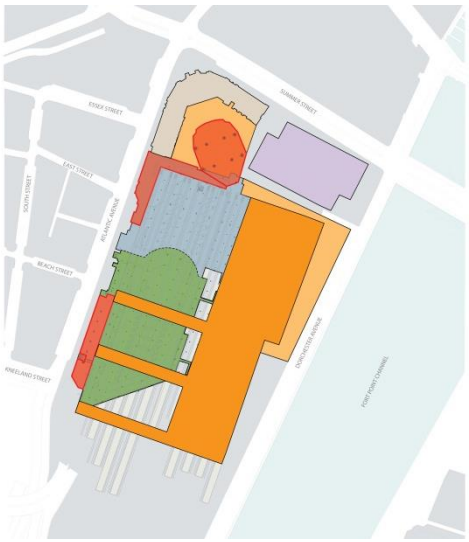


Figure 11 – South Station Expansion Upper Concourse at Level +20

Figure 12 – South Station Expansion Passenger Flow at Platform Level 0

5.2.2. Constraints

- Obstructs direct connection to the street at Atlantic Avenue from the Dorchester Avenue side due to the SSAR project.
- Creates a bifurcated station due to the SSAR project.
- Creates a narrow corridor between the existing and new platforms due to the SSAR tower columns and egress stair, thereby obstructing effective passenger flow at the concourse level and worsening the existing condition.
- Involves physically constrained and limited area for vertical circulation elements (e.g. stairs, escalators, and elevators to connect to the new upper concourse).
- Has minimum terra firma land value along Dorchester Avenue for optimal future joint development due to the elongated upper concourse and at-grade rail terminal facility. Future joint development could be built over portions of the Dorchester Avenue entrances, but with limited at-grade square footage.
- Creates a Dorchester Avenue presence for the SSX project that is important for urban connections, but not dynamic in bringing the desire lines in circulation paths to the entire station. The length of the upper concourse and the perpendicular concourse "arms" while functional in configuration are long in distance and lengthy for pedestrian travel.
- Lacks the place-making quotient of the project vision for an identifiable and compelling sense of place due to the elongated frontage on Dorchester Avenue.

5.3. Scenario 3 – Diagonal Concourses

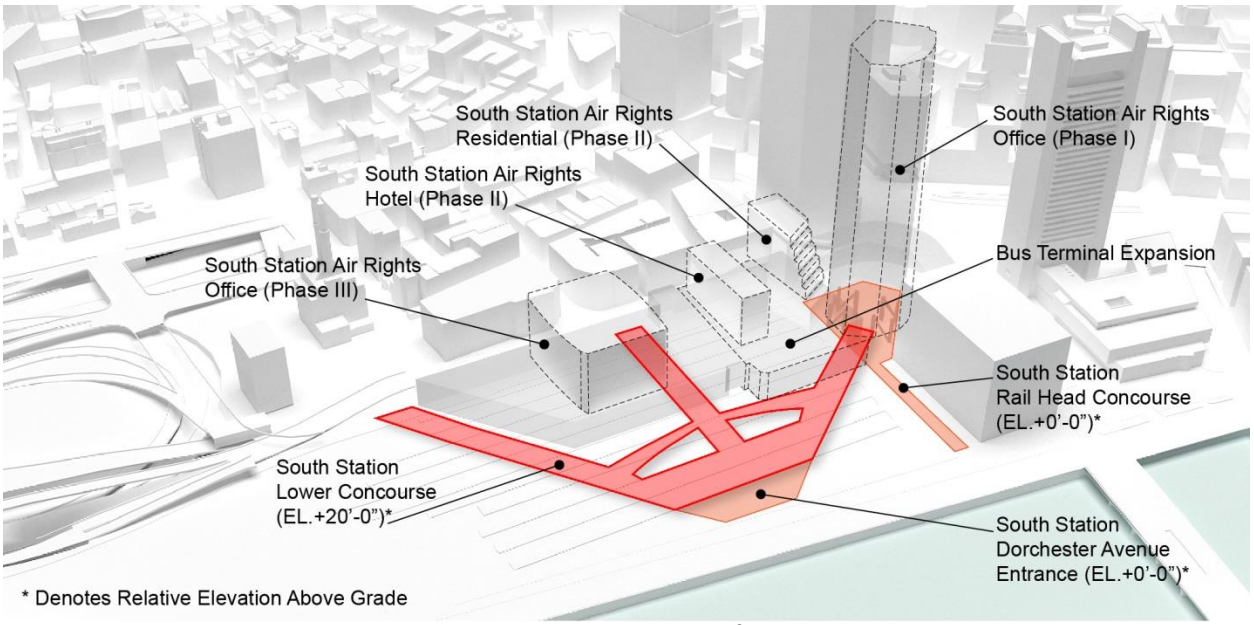


Figure 13 – Scenario 3 – Diagonal Concourse at Level +20[2]

[2] Level +20 and Level +30 is a reference to height above the platform; i.e. Level +20 is 20 feet above the platform.

Scenario 3 incorporates the SSAR project with minor design modifications for improved multimodal and intermodal connections at South Station. The functional concourse bridges are realigned to directly respond to the desire lines from Dewey Square/Downtown Financial District, Leather District, and Chinatown. In effect, the two outer concourses or "arms" are configured in a diagonal axis for direct connections for these neighborhoods to the train station node. The new station and the Dorchester Avenue entrance into the station are now shaped by the circulation paths and desire lines, creating a trapezoidal plan.

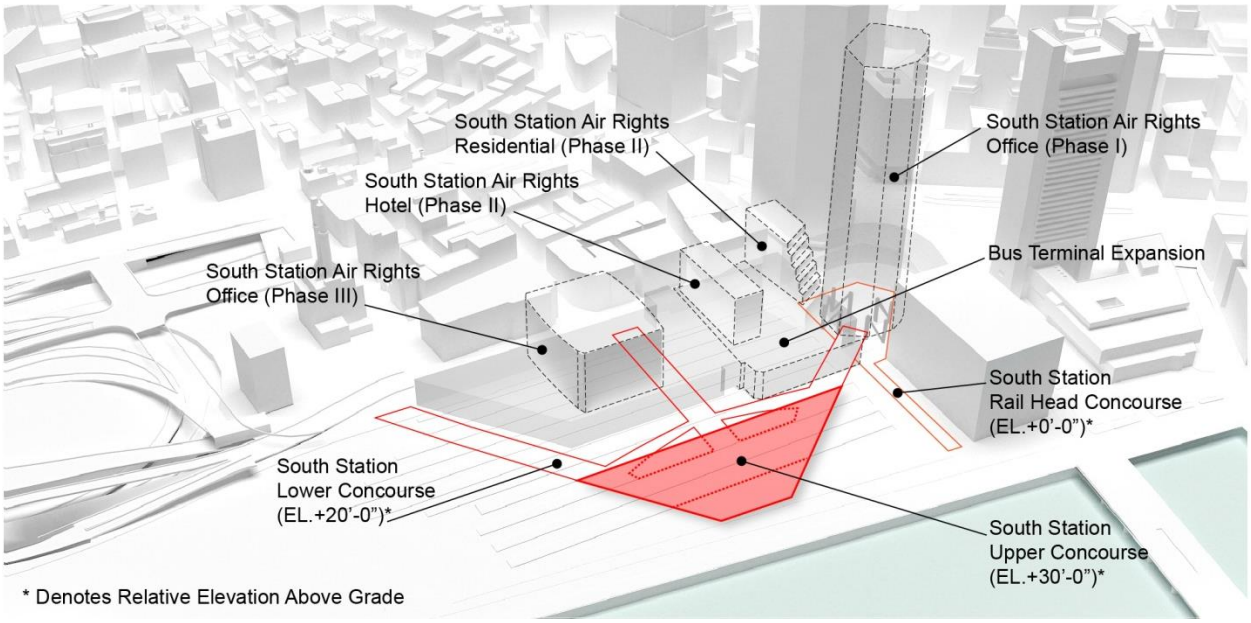


Figure 14 – Scenario 3 – Diagonal Concourse at Level +30

Passenger boarding would occur from a new elevated concourse at Level +20 that serves the existing and new platforms, as shown in Figure 13. Separated passenger alighting occurs via the trackhead at platform level, thereby reducing passenger flow conflicts and relieving passenger congestion. Scenario 3 is an organic outgrowth of Scenario 2 from the direct diagonal lines of concourse circulation. At Level +30, shown on Figure 14, passenger amenities, passenger services, station retail, and food and beverage concessions are programmed for the space in the headhouse expansion.

Opportunities and constraints are described in the following sections.

5.3.1. Opportunities

- Eliminates the need to shorten some of the existing tracks. This is possible by the following:
    - Relocation of the SSAR project elevators for the bus expansion at the head of Tracks 5 and 6, which would have required track shortening.
    - Relocation of the SSAR project stairs and escalators for the bus expansion at the head of Tracks 7 and 8, which would have required shortening of these tracks and adjacent Platforms D & E; and
    - Shortening of Track 8 due to the location of the SSAR column that supports the tower. Thus, Platforms E & F are shortened for this reason.
- Optimizes passenger flow between the headhouse and platforms by straightening and aligning the north ends of the platform to create a uniform trackhead concourse width to optimize circulation.

- Allows for an elevated concourse that relieves the current passenger flow conflicts by separating passenger boardings and alightings.
- Allows for multiple exits off the platform via concourse bridges to comply with NFPA 130's requirement to clear the platforms in four minutes or less.
- Provides an opportunity for significant daylighting and use of natural ventilation at the expanded station, through implementing a "no build" zone above the station expansion.
- Reserves a ventilation zone between the bus terminal and Dorchester Avenue side station so as not to preclude mechanical equipment placement, air shafts, and structural penetrations.
- Requires modification to the current ventilation system in the existing track and platform areas due to the presence of the elevated concourses or "bridges" over the platforms.
- Requires minimum modification to the station ventilation provided under the SSAR project due to the overbuild structures over the northern ends of the existing platforms – Platform A through Platform G.
- Creates a more integrated, intermodal connection among the rail station, bus concourse, and subway, as the headhouse expansion is the central node of the upper concourses, as shown on Figure 15.
- Creates multiple station entrances and exits as well as improves the pedestrian access to the existing entrances and exits, as shown on Figure 15.
- Passengers in Scenario 3 will have more access points and choices; and no longer have to walk to the outside of the terminal if their origin is south of the main entrance through the South Station headhouse. Pedestrians will have more direct station access from Beach Street to the center concourse and/or from Kneeland Street to the southernmost concourse. Likewise, on the Dorchester Avenue side of the station, pedestrians will have a major entrance supplemented by another entrance at the west end of the trackhead concourse (behind the 245 Summer Street building).
- Creates an opportunity for a significant station connection to Dorchester Avenue and Harborwalk, with visual corridors to the Innovation District across Fort Point Channel.
- Dedicates land with terra firma value along Dorchester Avenue north and south of the headhouse expansion entrance facing Fort Point Channel. In Scenario 3, the headhouse expansion is an infill site between potential joint development properties with urban design goals of maintaining a cognizant street plane along Dorchester Avenue. The diagonal footprint of the expansion provides more frontage for potential joint development than Scenario 2.
- Creates a dynamic Dorchester Avenue headhouse presence for the SSX project. The axiom "form follows function" concentrates and culminates the desire lines of the circulation paths into the Dorchester Avenue entrance. Circulation routes on the upper (+20 Level) concourses are direct requiring lower travel distances as a result of the diagonal concourse configuration.
- Scenario 3 has high value in the place-making quotient of the project vision for an identifiable and compelling sense of place. The ends of the upper concourses lead into a grand public hall in the headhouse expansion with strong, clear dominate views to Fort Point Channel and the Innovation District. The station expansion in Scenario 3 is the "town square" for public gathering, dwelling and waiting for train departures; and allows for natural daylight to penetrate into the platform levels of the rail platforms and concourses.

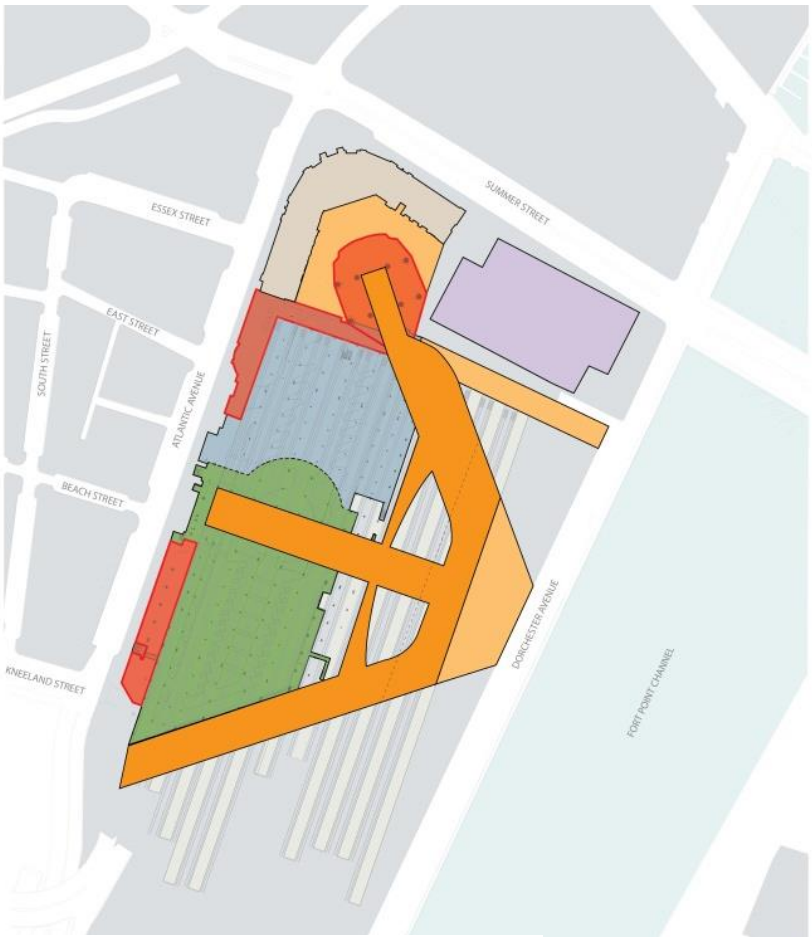


Figure 15 – Scenario 3 – Diagonal Concourse and Headhouse Expansion (Central Node)

5.3.2. Constraints

- Requires minor modification of SSAR project's plenum[3] and associated mechanical ventilation dampers (operable louvers) in the northeast corner of the station ventilation system located directly above the platforms and train tracks.
- Requires re-modeling and validating the SSAR project's computational fluid dynamic (CFD) analysis for the platform ventilation system, due to the modification of the plenum.
- Requires relocation of the vertical circulation elements (VCE), consisting of escalators, stairs and elevators, for the bus terminal expansion to the north end of the diagonal concourse.
- The above-mentioned VCEs relocated from the SSAR bus expansion project will largely benefit both the SSAR and SSX projects. The new location of the VCE will be co-located within the SSAR super columns and will be a joint use for bus terminal travelers as well as for the rail passengers in creating an integrated intermodal facility.
- Obstructs direct connection to the street from the northern half of the platform.

[3] Plenum is an air-filled space in a structure; one that receives air from a blower or set of fans for distribution (as in a ventilation system).

6. Transportation-Related Qualitative Screening

6.1. Transportation Criteria

The following transportation qualitative criteria were used to rate Scenarios 1, 2, and 3:

- **Multi-modal / Integrated Station.** How does the scenario integrate the multimodal functions, connections and transfers among bus-rail-subway as well as surface transportation modes and bicyclists?

- **Mid-platform Boarding.** Does the scenario address mid-platform boarding to segregate boarding from exiting passenger flows from the rail platform? Are platform bridges used solely for egress-only purposes?

- **Overall Passenger Circulation.** What is the scenario's rating with respect to circulation flows, as measured or estimated by LOS at congestion points ("bottlenecks") on the concourse, VCEs, and around fixed obstructions?

- **Passenger Experience and Amenities.** How does the scenario allocate station amenities and support functions, such as restrooms, ticketing, retail, and food and beverage concessions, with respect to passenger circulation and waiting areas?

- **NFPA 130 / Egress Paths.** How does the scenario comply with NFPA 130 for egress (clearing) of platforms? What is the scenario's adequacy of VCEs to clear the platforms and travel distances?

- **Ventilation.** How does the scenario accommodate ventilation shafts, ducts, openings, and (horizontal/vertical) fan plants at this conceptual level? How does the scenario acknowledge space-proofing measures still need to be performed?

- **Construction Cost.** Are there additional infrastructure requirements, such as ramps, structures including components for joint development, and ventilation, which would elevate the construction costs relative to other scenarios?

- **Phasing / Constructability.** What is the qualitative phasing and constructability ranking of the scenario?

- **Project Vision.** How does the alternative address the objectives emphasizing convenient and comfortable passenger waiting areas with height, natural light, clear lines of sight, easy, intuitive orientation and view corridors to Fort Point Channel, and connections with adjacent neighborhoods?

6.2. Rating System

A rating system of 1 through 5 was used to screen Scenarios 1, 2, and 3, as presented in Figure 16. The ratings for the evaluation are ranked from "1," rated as poor, to "5," rated as excellent. For this screening, the ratings are defined as follows:

- 1 Rating = Poor
- 2 Rating = Fair

- 3 Rating = Average
- 4 Rating = Good
- 5 Rating = Excellent

6.3. Screening Results

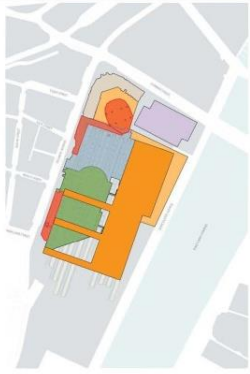
		Scenario 1		Scenario 2		Scenario 3	
South Station Air Rights		As Permitted by Hines		As Permitted by Hines		Hines with Minor Modification	
Rail Expansion		Single-Level Concourse		Functional Concourses - separate flows		Diagonal Concourses – separate flows	
Plan							
		South Station Headhouse South Station Concourse Bus Terminal Bus Terminal Expansion South Station Air Rights					
Transportation	Multi-modal /Integrated Station	Poor	1	Fair	2	Good	4
	Mid-platform Boarding	Poor (none provided)	1	Good	4	Good	4
	Overall Passenger Circulation	Poor (no improvement)	1	Average	3	Excellent	5
	Passenger Experience & Amenities	Poor (little improvement)	1	Average	3	Excellent	5
	NFPA 130/Egress Paths	Poor (no improvement)	1	Good	4	Good	4
	Ventilation	Fair (Hines provides at existing)	2	Good	4	Excellent	5
	Construction Cost	TBD	-	TBD	-	TBD	-
	Phasing/Constructability	Average	3	Average	3	Average	3
	Joint Development Opportunity	Good (Terra Firma)	4	Poor (minimal Terra Firma)	1	Average	3
	Funding & Financing Implication	TBD	-	TBD	-	TBD	-
	Project Vision	Poor	1	Fair	2	Excellent	5

Figure 16 – Screening Matrix: South Station Expansion Scenarios

- **Scenario 1: Base Condition – Single-Level Concourse**. Scenario 1 incorporates the SSAR project "as planned" by the developer, including the bus terminal and parking expansion in Phases 1, 2, and 3. It utilizes a single-level for both boarding and alighting trains, similar to present day conditions. Scenario 1 represents the base case scenario for comparison with the other two options. Scenario 1 scored 15 points.

- **Scenario 2: Functional Concourses**. Scenario 2 has similar existing conditions elements as Scenario 1 with respect to the SSAR project components, e.g. bus expansion, super columns, station ventilation system, VCEs, and others. Scenario 2 employs functional concourse bridges which comply with NFPA 130 for egress requirements, as well as provides boarding from the upper concourse from above the platforms. This scenario separates the passenger arriving and departing flows. Scenario 2 scored 26 points.

- **Scenario 3: Diagonal Concourses**. Scenario 3 builds off of Scenario 2, and realizes an organic circulation flow through the concourse layouts, corresponding to the diagonal desire lines from Dewey Square, Chinatown, and Leather Districts into the South Station train shed. The station expansion is the centroid of the desire lines conveyed through the concourse bridges. Scenario 3 scored 38 points.

7. Build Alternative

The screening resulted in the development of an alternative that incorporates elements from both headhouse Scenarios 2 and 3. As shown in Figure 17, the Build Alternative provides multiple access points along Dorchester Avenue; integrates with the existing headhouse underneath the SSAR tower; and provides a mid-platform elevated concourse that will access the new and existing platforms. The main access point for the station expansion will be at Dorchester Avenue just south of 245 Summer Street.

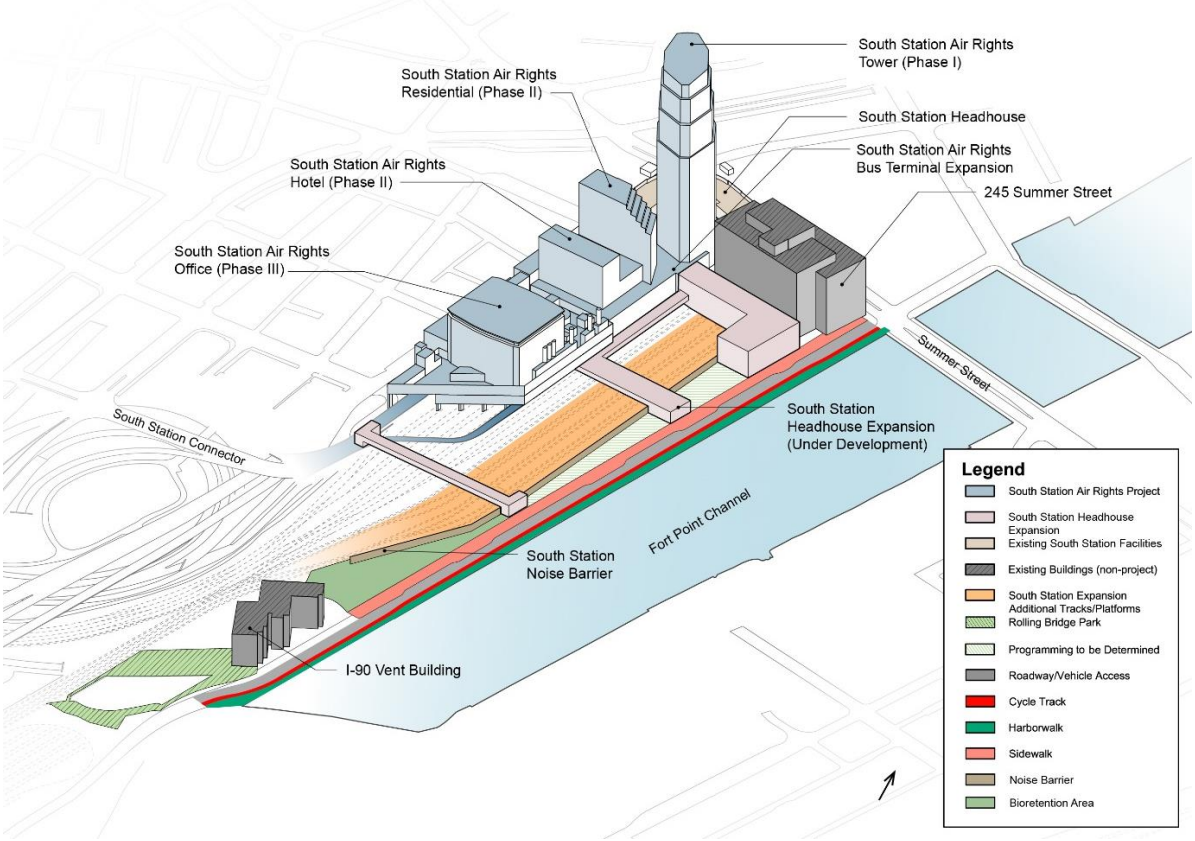


Figure 17 – Preferred SSX Headhouse Alternative

This northern access is more appropriately located to capture the pedestrian flow along Summer Street than the more southern location of the main entrance in Scenario 3. The elevated mid-platform concourse will have direct access to Dorchester Avenue and will also connect with Atlantic Avenue through the existing bus terminal rotunda providing a direct connection through the station to the waterfront. The southernmost access will be emergency egress only, as required for compliance with NFPA 130.

7.1.1. Opportunities

- Optimizes passenger flow between the headhouse and platforms by straightening and aligning the north ends of the platform to create a uniform trackhead concourse width to optimize circulation.

- Allows for an elevated concourse that relieves the current passenger flow conflicts by separating passenger boarding and alighting.
- Allows for multiple exits off the platform via concourse bridges to comply with NFPA 130's requirement to clear the platforms in four minutes or less.
- Provides an opportunity for significant daylighting and use of natural ventilation at the expanded station by minimizing structures above the platforms.
- Requires modification to the existing ventilation system in the existing track and platform areas due to the presence of the elevated concourses or "bridges" over the platforms.
- Requires minimum modification to the station ventilation provided under the SSAR project due to the overbuild structures over the northern ends of the existing platforms – Platform A through Platform G.
- Creates a more integrated, intermodal connection among the rail station, bus concourse, and subway.
- Creates multiple station entrances and exits as well as improves the pedestrian access to the existing entrances and exits.
- Similar to Scenario 3, passengers will have more access points and choices; and no longer have a need to walk on the outside of the terminal if their origin is south of the main entrance through the South Station headhouse. Pedestrians will have more direct station access from Atlantic Avenue to the center concourse. Likewise, on the Dorchester Avenue side of the station, pedestrians will have a major entrance at the trackhead supplemented by another entrance further south along Dorchester Avenue.
- Creates an opportunity for a significant station connection to Dorchester Avenue and the Harborwalk, with visual corridors to the Innovation District across Fort Point Channel.
- Maximizes land with terra firma value along Dorchester Avenue adjacent to the station entrances facing Fort Point Channel. The Build Alternative provides the most symmetrical parcels along Dorchester Avenue for the potential to accommodate future development.
- Minimizes the impacts associated with the SSAR project through improved integration of the elements of the two projects that interface with each other.

7.1.2. Constraints

- Although the Build Alternative minimizes the impacts associated with the SSAR project, it is imperative for continued coordination between the projects to ensure optimal integration.

8. Conclusion

This South Station Headhouse Alternatives Analysis Report provides a high level synopsis of the station design scenarios that have been evaluated from a transportation improvement and station integration perspective. This aspect of the SSX alternatives analysis has been developed in parallel with other on-going separate studies, such as urban design, traffic and transportation, financial, and structural feasibility.

Regulatory requirements, environmental review, and desired passenger and service improvements guide the design of the Build Alternative through preliminary engineering. MassDOT is committed to achieving the project goals outlined in the design principles, meeting and/or exceeding regulatory requirements, and

providing a multimodal station that will serve all passengers today and in the future. MassDOT will continue to coordinate with the SSAR project to ensure that the two projects will integrate seamlessly and combine to create an improved passenger experience at South Station. The Build Alternative accommodates increased rail service; enhances the passenger experience at the station; improves multimodal connections; and integrates the station with adjacent neighborhoods and open spaces. Additionally, the preferred headhouse alternative would be aligned so that it would not preclude any future air rights development.

While the station alternatives analysis has centered on development incorporating the SSAR project, the evaluations consistently identify the impact to passenger circulation flows resulting from the columns of the Phase I tower structure. MassDOT will continue coordination with the SSAR project team to minimize the passenger flow impacts, better integrate the two projects, and emphasize the multimodal functions of South Station.

There are many financial and urban design benefits that can be derived from successful future joint development. Concurrently, there is strong merit and desire to maintain well-lit, expansive, open unobstructed public atria in the proposed station expansion. Significant benefits that can be realized include:

- Strong intuitive circulation paths through an expansive room;
- Collateral value to the surrounding area associated with the historic South Station headhouse;
- An indelible “sense of arrival” and memorable “sense of place” at South Station;
- Destination-oriented place in downtown Boston; and
- A notable interior public space to connect and accommodate the intersecting circulation paths of bus, rail, and subway passengers.

Appendix B – Indirect and Cumulative Impacts

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SOUTH STATION
EXPANSION

South Station Expansion Project
Environmental Assessment and
Section 4(f) Determination

Appendix B – Indirect and Cumulative Impacts

September *2017*

massDOT
Massachusetts Department of Transportation

U.S. Department of Transportation
Federal Railroad Administration

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1. Introduction

The Council on Environmental Quality (CEQ) regulations at 40 CFR 1500 *et seq* require an assessment of indirect and cumulative impacts for federally assisted projects. This section provides an assessment of the indirect and cumulative impacts of the South Station Expansion project (SSX) and other ongoing and planned projects in the project study area and the surrounding region. This analysis also includes a qualitative assessment of indirect impacts associated with the relocation of the United States Postal Service (USPS) General Mail Facility (GMF).

2. Methodology

The project has the potential to produce indirect impacts and, when combined with past, present, and other reasonably foreseeable future projects, could result in cumulative impacts to certain resources. A qualitative assessment of indirect impacts was based on land use analyses, and information provided by planning departments regarding future development.

The following steps were taken to complete the assessment of indirect and cumulative impacts:

- Reviewed land use and development planning documents related to the project sites;
- Identified approved, ongoing, and proposed developments in the vicinity of the project sites;
- Assessed the impact of the project on ongoing and proposed development; and
- Identified potential mitigation strategies to offset adverse impacts.

3. Indirect Impacts

Indirect impacts are defined as those impacts caused by an action that occur later in time or farther removed in distance, but are still reasonably foreseeable. Indirect impacts may include growth-inducing effects and other impacts related to changes in the pattern of land use, population density or growth rate, and related effects on traffic, noise, air quality, water quality, and other natural systems.

The following sections review the indirect impacts associated with the SSX project, including reopening Dorchester Avenue to public access, and the layover facility development. However, the primary indirect impact of the SSX project would be the relocation of the USPS facility. As noted in EA Chapter 1, the project would involve acquisition and demolition of the USPS GMF located on Dorchester Avenue adjacent to South Station, which would provide an approximately 14-acre site on which to expand South Station. Although demolition of the USPS facility after it is vacated is part of the project, the relocation of USPS operations is not part of the project. The USPS would determine the future location(s) to which its operations would be relocated, and the relocation would be subject to its own environmental review as required by state and federal regulations as a separate project. For the purposes of this indirect assessment, it is assumed that the USPS GMF could be relocated to a site in South Boston on the Reserved Channel in Boston's Seaport District (Figure 1) that the USPS had previously identified as potentially being appropriate to accommodate a relocated USPS GMF The actual relocation of the USPS GMF would be subject to negotiations between the USPS and MassDOT/the Commonwealth of Massachusetts.

3.1. South Station

3.1.1. Terminal Expansion

South Station is the central transit hub (Amtrak, commuter rail, subway, buses) for commuters to the Financial District and the South Boston Waterfront/Innovation District in Downtown Boston. The South Boston Waterfront/Innovation District is the fastest growing area in Boston, and the South Station improvements would provide increased transit capacity to accommodate growing transportation demands from significant commercial and residential development. The Innovation District has added 200 businesses and 5,000 jobs since it was conceived in 2010.[1] Further discussion of the South Boston Waterfront/Innovation District growth and development is presented in EA Section 3.13.

The urbanized land use and growth patterns are firmly established in the surrounding neighborhoods in the Financial District, Chinatown, the Leather District, and South Boston, and the SSX project is not anticipated to change land use patterns or growth patterns, other than being essential to support the considerable commercial and residential growth occurring in these areas. Positive indirect impacts on social and economic conditions would relate to enhanced accessibility for residents, workers, and tourists within and beyond the Downtown Boston area. By accommodating improved rail service frequency and reliability, the SSX project would support continued economic development and job and population growth.

3.1.2. Opening Dorchester Avenue to Public Access

The portion of Dorchester Avenue between the USPS GMF and the Fort Point Channel is currently closed to the general public. The SSX project would reconstruct the roadway and allow public access for motorists and connect the Harborwalk through the site. The reopening of Dorchester Avenue will provide another key link between South Boston and the Financial District and will relieve traffic congestion along Atlantic Avenue, but is not expected to result in substantial negative indirect impacts, as the area is already urbanized and heavily travelled.

3.2. Layover Facilities

The Widett Circle site area is dominated by industrial uses and rail operations and support facilities, including Amtrak's Front Yard and Southampton Street Yard, the MBTA's South Side Service and Inspection Facility and Cabot Yard, which is the primary MBTA Red Line maintenance facility. The indirect impacts associated with the development of the Widett Circle site as a layover facility involve the potential relocation of the businesses that are currently in operation there. It is anticipated that suitable relocation sites are available within the industrial sites in the immediate South Boston area for the displaced businesses. MassDOT and the City of Boston would coordinate with these businesses to find relocation options in the Boston area. Relocation assistance would be provided to affected owners.

The Readville − Yard 2 site is currently an existing MBTA layover facility, and the proposed expansion is not anticipated to incur substantial indirect impacts.

[1] City of Boston, Boston Redevelopment Authority. *Innovation Boston.* Accessed September 12, 2016. http://www.bostonredevelopmentauthority.org/business-dev/initiatives/innovationboston/overview.

Figure 1 — Potential USPS GMF Relocation Area

3.3. United States Postal Service Relocation

MassDOT and FRA are considering the USPS relocation as an indirect impact in the SSX project NEPA process. For the purposes of this analysis, it is assumed that the USPS GMF could be relocated to a site in South Boston. This analysis qualitatively discusses the potential impacts of the USPS GMF relocation on traffic, the human environment, historic and archaeological resources, historic properties, waterways and wetlands, floodplains, ecology, air quality, noise and vibration, and site contamination and hazardous materials. The eventual relocation of the USPS GMF to any site would be subject to all applicable state and local permitting and environmental review processes should it move forward.

3.3.1. Traffic Assessment

The traffic impacts associated with the potential relocation of the USPS GMF includes estimates of traffic generation, potential traffic shifts, and roadways that would likely experience an increase. For traffic generation, the analysis assumes that the number of USPS employees and the mode of travel would not change with the relocation. For traffic distribution and assignment, the analysis assumes that all USPS employee parking and truck loading/unloading activity would be accommodated on-site, or in the immediate vicinity of the site.

Existing Trip Generation

To help quantify the USPS existing traffic generation, observations were conducted in November 2015 on Dorchester Avenue (at both USPS access gates), along A Street (at the USPS parking lot), and along the West Service Road (at the USPS parking lots). Data were collected between 6:00 a.m. to 7:00 a.m. and 2:00 p.m. to 3:00 p.m. These hours generally coincide with USPS employee shifts and were identified as the peak periods for USPS traffic under a previous traffic assessment.[2] The vehicle data collection included all vehicles arriving and departing USPS facilities and included employees, USPS vehicles, contractors, visitors, vendors, and others. Trips made by public transportation and other modes were not counted since they are assumed to be unchanged in the future.

Table 1 — USPS Trip Generation (Vehicle Trips)

	USPS Trucks (Postal Vehicles & Deliveries)	Other Trucks	Passenger Vehicles (Employees & Others)	Shuttle Buses/ Vans	Visitors	Total
Morning Peak						
Entering	39	13	201	1	27	281
Exiting	57	14	75	3	24	173
Total	**96**	**27**	**276**	**4**	**51**	**454**
Afternoon Peak						
Entering	23	21	102	6	36	188
Exiting	23	25	107	5	41	201
Total	**46**	**46**	**209**	**11**	**77**	**389**

Note: Shuttle bus trips will be excluded from the potential relocation since the assessment assumes that employees park on-site or in the vicinity of the potential site.

[2] *Potential Boston General Mail Facility Level 2 Traffic Impact Assessment*, Boston, Massachusetts, May 2008.

There are very few employees working at the USPS facility during the typical evening commute peak hour from 5:00 p.m. to 6:00 p.m. Therefore, the evening commute peak hour was excluded from this study due to the low traffic generation and afternoon peak volumes were used to establish the existing trip generation for the USPS facility. The existing trip generation is shown in Table 1.

The trip generation results indicate a total of 454 vehicle trips generated by the USPS facility during the morning peak hour (6:00 a.m. to 7:00 a.m.). The afternoon peak hour (2:00 p.m. to 3:00 p.m.) generates a total of 389 vehicle trips. Many of the visitors to the facility were observed at the Dorchester Avenue northern gate visitor parking area, where the average duration for the visiting vehicle was under 30 minutes.

Shuttle buses carrying employees to/from the USPS facility were captured in the counts at the Dorchester Avenue northern gate. In the morning peak hour, four shuttle trips were observed, one entering and three exiting. During the afternoon peak, 11 shuttle trips were observed, six entering and five exiting. In the future, all employee parking is assumed to be provided on-site or in the immediate vicinity of the site so that the shuttle buses will no longer be used, thereby slightly reducing the number of trips generated by the relocated facility.

Trip Distribution

Once the level of traffic generation was estimated, the next step in the assessment involved redistributing traffic to the potential Reserved Channel site. The following traffic-generating uses were assumed to be relocated:

- USPS employees (passenger vehicles)
- USPS mail freight trucks (single unit trucks and tractor trailers)
- USPS parcel post trucks (one- and two-ton trucks)
- Private drop-ship tractor trailers
- Business mail trucks (private passenger vehicles, vans, single unit trucks)
- Couriers (private passenger vehicles, vans, trucks)

These vehicles trips were all captured during the field observations and included in the trip generation estimate in Table 1. In order to redistribute traffic, the following assumptions were made:

- All vehicles would enter and exit via E Street and that a planned connection of E Street to the intersection of Summer Street at Pumphouse Road would be in place;
- The South Boston Bypass Road would be available for general traffic during morning hours; and
- USPS employee home distribution and distribution of other USPS trips (vehicles, drop ship, private entities) from previous assessments would not change substantially.[3]

The resulting distribution of employee vehicles and other USPS-generated vehicles is shown in Figure 2 and Figure 3. The final step in this assessment involved assigning the redistributed trips to the roadway network. Figure 4 and Figure 5 illustrate the shift in trip patterns, comparing existing patterns to proposed patterns.

[3] *Potential Boston General Mail Facility Level 2 Traffic Impact Assessment*, Boston, Massachusetts, May 2008.

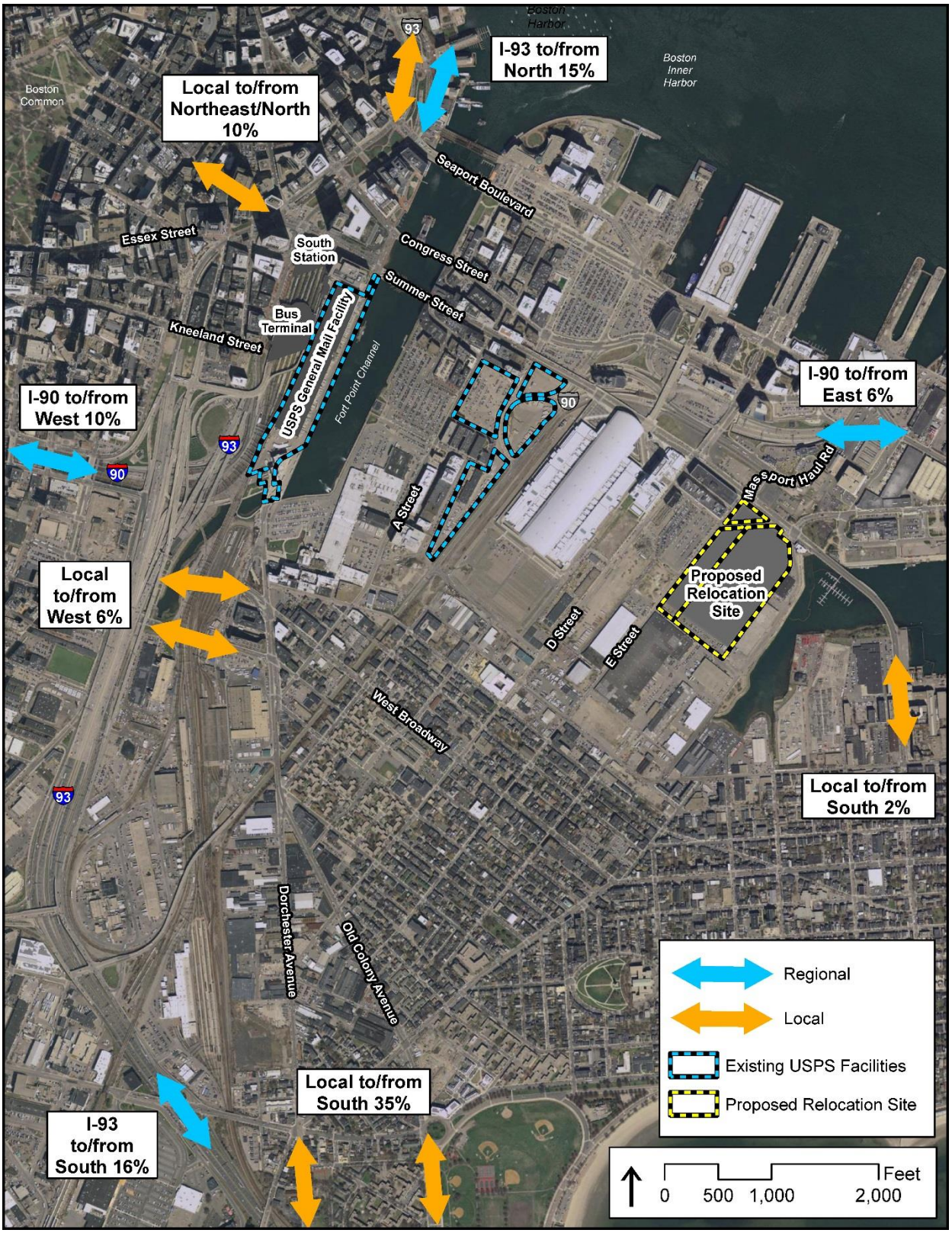

Figure 2 — USPS Employee Traffic Redistribution

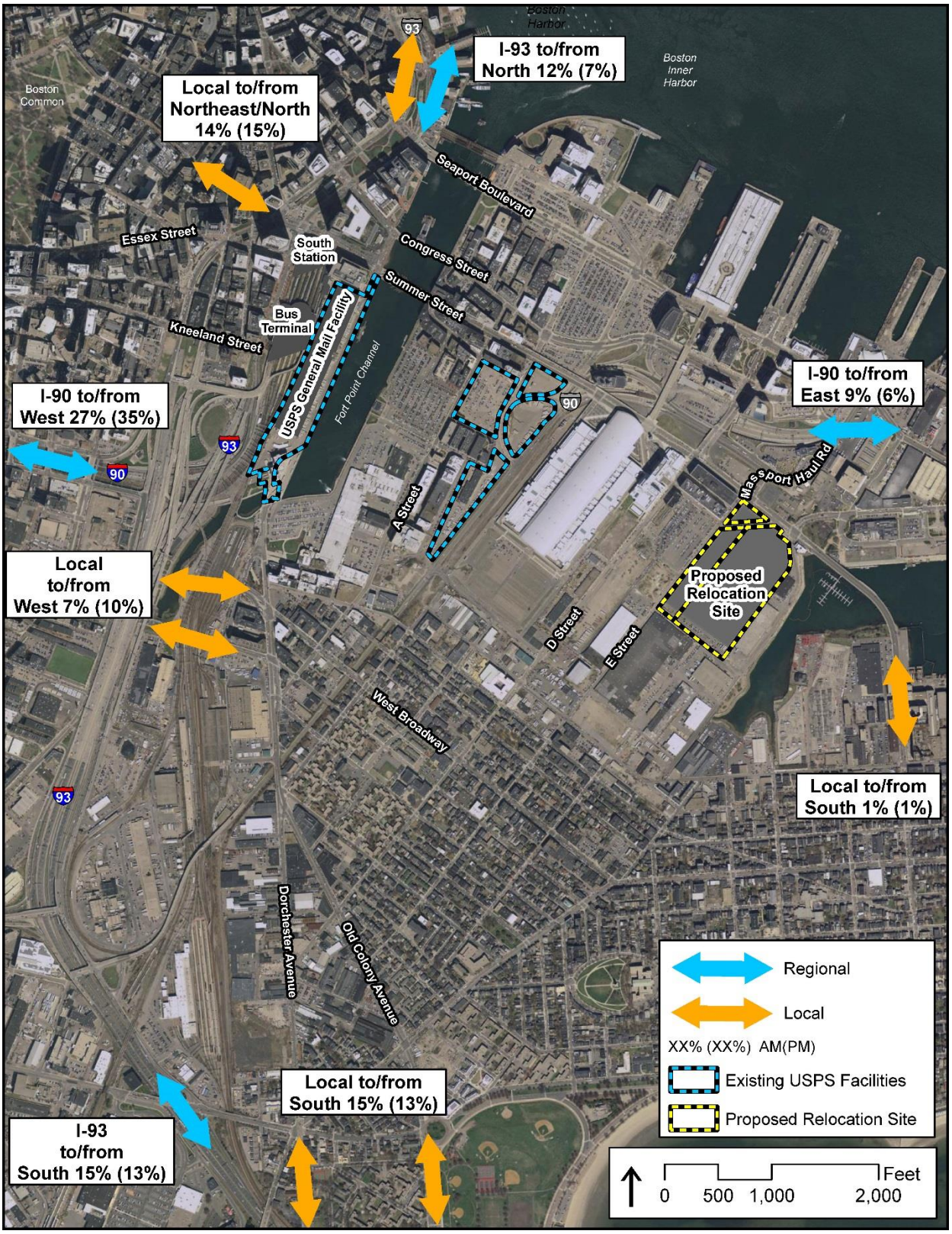

Figure 3 — USPS Truck Traffic Redistribution

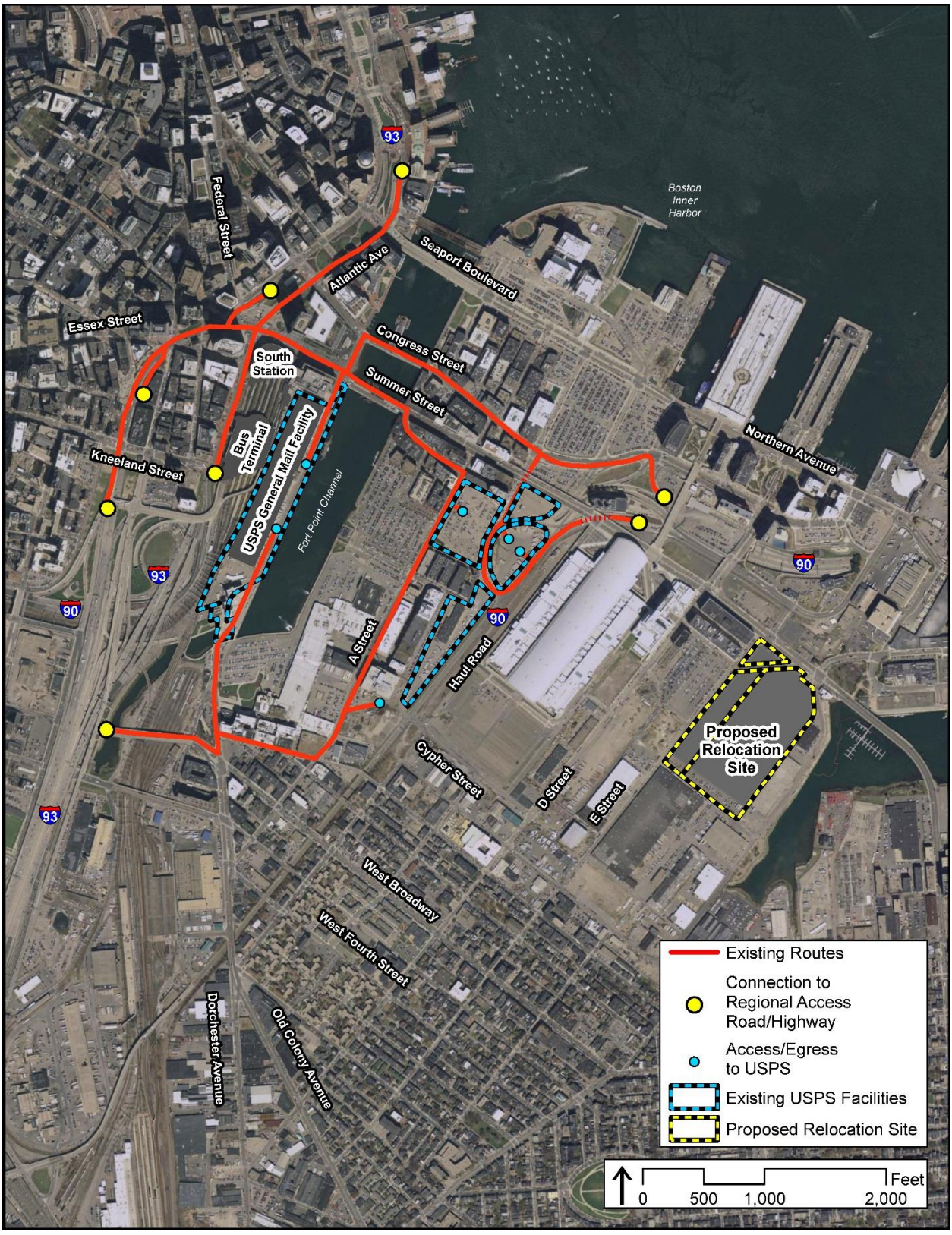

Figure 4 — Primary USPS Routes (Existing Site)

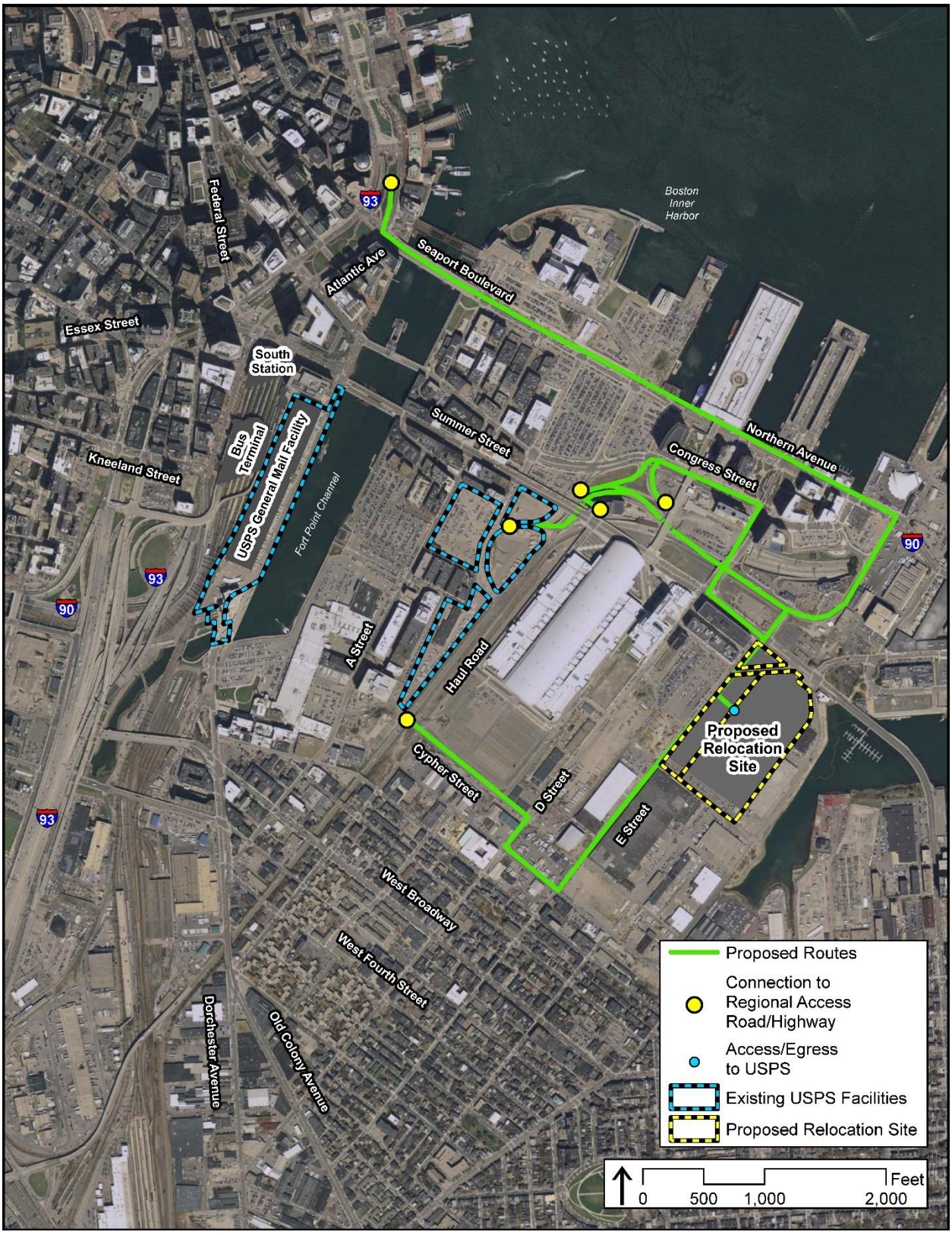

Figure 5 — Primary USPS Routes (Relocated Site)

Assessment of Impacts of USPS Traffic Shifts

Based on this assessment of relocated trip patterns, the relocation of the USPS facility would have a minor impact on the roadway network and would reduce USPS traffic on local streets in the Financial District and through Dewey Square. During the USPS peak traffic demand periods in the early morning and early afternoon, there would be an increase in traffic along the roads and at the intersections surrounding the new site location on E Street and along Seaport Boulevard/Northern Avenue. The relocation to the Reserved Channel site would eliminate or substantially reduce the existing USPS trips that travel through the Financial District and the congested Dewey Square intersection at Atlantic Avenue and Summer Street – a direct result of the more convenient regional highway connections at the potential relocation site.

The potential USPS relocation site allows for more convenient access to the I-90 and I-93 interstate ramps off Congress Street and the South Boston Bypass Road via the Massport Haul Road for trucks. This enhanced regional highway access would reduce the amount of traffic, particularly truck traffic, forced to rely on congested downtown roadways in the Financial District in order to access the interstate system. Overall, the USPS relocation would reduce vehicle miles traveled on local roads due to the more convenient regional highway connections at the potential relocation site.

3.3.2. Human Environment

Land Use

The land use study area is defined as one-half mile surrounding the potential USPS relocation site at the Reserved Channel in the South Boston Waterfront, currently the fastest growing neighborhood in the City of Boston. The potential relocation site for the USPS facility is located in the South Boston neighborhood approximately one mile southeast along Summer Street from the existing USPS GMF facility at the intersection of Summer Street, Fargo Street, E Street, and Pappas Way. The site currently consists of one permanent structure and is almost entirely paved. The existing structure is a one-story aluminum sided warehouse with a small office and five loading bays. Portions of the site are used for surface parking and the remainder of the site is used for vehicle and materials storage. The existing land use description is based on aerial photographs.

Land use in the vicinity of the site includes marine-based and general industrial and commercial uses. The area directly adjacent to the site along E Street and Pappas Way largely consists of surface parking and one-story industrial warehouse structures. Along Summer Street adjacent to the parcel, the structures are older masonry buildings of up to ten stories. The closest residential uses are located approximately 800 feet west of the area along D Street. Recent development in the South Boston Waterfront/Innovation District has focused on mixed uses including residential, light industrial, office, and commercial projects, and the potential relocation of the USPS GMF facility to this area will be compatible with the mixed uses and diverse types of industry in the area.

Zoning

The surrounding area is zoned for light industrial, industrial, waterfront commercial, and waterfront marine uses. The site is primarily regulated by the City of Boston's Zoning Code Article 68, South Boston Neighborhood District. More specifically, the potential relocation site falls within Article 68, Section 68-16, Establishment of Waterfront Subdistricts. There are two subdistricts in this section and they are both applicable to the potential relocation site, the Waterfront Manufacturing Subdistrict and the Waterfront Commercial Subdistrict.

Environmental Justice

The Environmental Justice (EJ) study area for this analysis encompasses a one-half mile radius surrounding the potential USPS location, including areas within walking distance determined to be most likely affected by the construction and operation of the relocated facility. As noted in the Land Use section, the potential relocation site is in an industrial and commercial neighborhood. There are only a small number of residences located within the study area, and of those residences, none include EJ populations.

This section demonstrates that MassDOT and the SSX project are in full compliance with Title VI of the Civil Rights Act of 1964 and the EJ policy of Massachusetts EEA relative to the relocation of the USPS GMF facility to a site in the Seaport area of Boston. More information on the policies and regulations regarding environmental justice can be found in DEIR Section 3.15, *Environmental Justice*.[4]

The potential USPS relocation would not directly displace any EJ populations, as no residential property takings would occur. The acquisition of the USPS facility would result in the relocation of all employees to another site in Boston. The number of employees at the USPS facility meeting EJ criteria is not known. Assuming that the percentage of workers that represent EJ populations is similar to the statistics for the City of Boston, roughly half (or 500) of USPS workers could represent EJ populations. No disproportionately high and adverse human health and environmental effects, including air quality, visual, social, and economic effects, are anticipated to impact EJ populations due to the relocation of the USPS GMF.

Visual

The majority of the site and the area surrounding the site are paved for surface parking and vehicle and materials storage. A relocated USPS GMF facility is a compatible use for the surrounding industrial/commercial area and the structure and related infrastructure will correspond with other buildings in the area. Therefore, no negative visual impacts are anticipated as a result of the USPS GMF relocation.

3.3.3. Historic and Archaeological Resources

The potential USPS relocation site does not contain any archaeological sites that are listed in, or eligible to be listed in, the Massachusetts State Register of Historic Places (SR) or the National Register of Historic Places (NR), and there are none within a one-half mile radius. The potential USPS relocation site is entirely on made land created as a result of various filling episodes in the South Boston flats undertaken by the Commonwealth and the U.S. government from the late nineteenth through mid-twentieth centuries. The entire potential USPS relocation site is classified as containing Urban Land with a wet substratum,[5] which is consistent with the documented late nineteenth- and twentieth-century landmaking projects that resulted in deep fill deposits in the former South Boston flats and the dredged Reserved Channel. There is no potential for significant pre-contact archaeological sites and the potential for significant post-contact resources is low. The northwest portion of the potential USPS relocation site could contain buried remains of the westernmost of the two documented early to mid-twentieth-century coal wharves, but these types of resources are ubiquitous infrastructure that characterized most of the Boston shoreline during that time, and are not considered to have a high historical or archaeological research potential. For these reasons, the potential relocation of the USPS GMF to the Reserved Channel site in South Boston is not expected to have any potential impacts to significant archaeological resources.

[4] South Station Expansion Project. *Draft Environmental Impact Report*. October 2014. http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

[5] U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). *Soil Survey of South Boston, MA,* 2015.

A file-based review of previously designated historic architectural resources within and in the vicinity (within one-quarter mile) of the project site was conducted to identify known historic resources. The Massachusetts Cultural Resource Information System (MACRIS) online database, the National and State Registers of Historic Places, and the Inventory of the Historic and Archaeological Assets of the Commonwealth ("Inventory") maintained by the MHC were reviewed. The file search identified properties listed in the State Register (SR) or National Register (NR), as well as properties that have been inventoried and/or reviewed by the MHC that are part of the Inventory. A site visit was not undertaken to field verify the results of the file-based review or to identify properties that have not been previously surveyed.

The one-quarter-mile radius extends approximately from the Boston Convention and Exhibition Center (C Street area) along West First Street, intersecting with Emerson Street, continuing in a diagonal trajectory to the former Army Supply Base Area and along Seaport Boulevard.

The MHC inventory and/or SR/NR forms were compared to existing conditions using Google Street View and Google Maps aerials. Changes in historic physical integrity including demolition, architectural alteration or other changes that negatively impact integrity were noted. These integrity evaluations are discussed in the following section and table.

Results

Review of MACRIS, the SR/NR, and the Inventory identified no historic properties within the project site. The area in the vicinity of the project site, consisting of a one-quarter-mile radius does not include any properties listed in the National or State Register. The area in the vicinity of the project site does encompass ten individual properties and three areas included in the Inventory. Of the ten inventoried properties, three have been demolished (Boston Beer Company, BOS.6848; South Boston Gas Light Company, BOS.6872; and L Street (Summer Street) Bridge, BOS.9234). Six of the extant individual properties have been significantly altered (e.g., window and door replacement, siding, additions), diminishing their architectural integrity. One property, South Boston Heights Academy (BOS.6761), appears architecturally intact.

The three areas included in the Inventory are the Boston Army Supply Base Area (BOS.RT), the C Street Industrial Area (BOS.RU), and the King Terminal Area (BOS.RV). The C Street Industrial Area has been completely altered since it was surveyed in 1997, due to the construction of the Boston Convention and Exhibition Center, which resulted in the demolition of the majority of the buildings in the area and alteration of the street grid. Prior to demolition and subsequent new construction, the C Street Industrial Area was recommended as eligible for listing in the NR as a historic district. The Boston Army Supply Base Area has been altered with new construction and demolition, though many of the buildings and the street grid remain. When surveyed in 1997, the area was recommended as a potential historic district. The King Terminal Area (BOS.RV), surveyed in 1997, was also recommended as a potential historic district. Since then, the area has experienced some building alteration and demolition.

None of the properties are listed in the State or National Register of Historic Places. There is no formal Determination of Eligibility for any of the properties included in the Inventory. The MHC has rendered eligibility opinions on two of the properties: the South Boston Heights Academy (BOS.6761) and the L Street (Summer Street) Bridge (BOS.9234), concurring with, respectively, the recommendations of the Boston Landmarks Commission and the Massachusetts Department of Public Works that the properties are eligible for listing in the National Register of Historic Places. The L Street Bridge has since been demolished. The only extant property with an MHC eligibility opinion is the South Boston Heights Academy. Table 2 summarizes the results of this file-based review.

Table 2 — Historic Resources in the Vicinity of the USPS GMF South Boston Project Site

MHC #	Name of Area/Property	Address	Designation	Comments
BOS.RT	Boston Army Supply Base	South Boston/Northern Avenue	Inventoried	Some demolition, infill; architectural integrity issues
BOS.RU	C Street Industrial Area	South Boston/ Summer Street	Inventoried	Most of area demolished for Convention Center, street pattern altered
BOS.RU	King Terminal Area	South Boston/ K Street	Inventoried	Some demolitions; building alteration
BOS.6848	Boston Beer Company	249 W Second Street	Inventoried	Demolished
BOS.6756, 6757, 6758, 6759	Bay State Iron Company. Worker Housing.	591, 593, 595, 597 East Second Street	Inventoried	Four remaining from original construction; loss of setting/design
BOS.6761	South Boston Heights Academy	486 East Third Street	Inventoried	Intact
BOS.6762	Ellen M. Wade House	512 East Third Street	Inventoried	Alterations include windows and siding
BOS.6872	South Boston Gas Light Co.	3-5 Dorchester Street	Inventoried	Demolished
BOS.7004	36 I Street	36 I Street	Inventoried	Alterations include windows, doors, and siding
BOS.9234	L Street Bridge	Summer Street over Reserved Channel	Inventoried	Four remaining from original construction; loss of setting/design

3.3.4. Waterways and Wetlands

This section presents a qualitative assessment of the potential indirect waterways and wetlands impacts of the potential relocation of the USPS GMF. Wetlands and surface waters are protected by the Massachusetts Wetlands Protection Act,[6] Section 404 of the Clean Water Act,[7] Section 10 of the Rivers and Harbors Act of 1899,[8] which regulates structures or work in navigable waters of the U.S., and Executive Order 11990, Protection of Wetlands.[9]

A review of the available GIS data, aerial images, and maps revealed that the Reserved Channel is the only surface water feature in the potential USPS relocation site vicinity. It is classified as Estuarine and Marine Deepwater by the National Wetland Inventory. The potential facility site is near, but not directly abutting, the channel. Due to the distance from the potential site, no impacts to the surface waters of the Reserved Channel are anticipated.

The only Wetlands Protection Act (WPA) jurisdictional resource that would be affected at the site of the potential USPS relocation is Land Subject to Coastal Storm Flowage (LSCSF). The entire site includes developed land cover such as pavement, sidewalks, and buildings, and no natural bank or vegetated land areas occupy the floodplain at the potential USPS location. There are no specific performance standards

[6] Massachusetts Wetlands Protection Act Regulations 310 CMR 10.00, June 2009. Accessed October 2012. http://www.mass.gov/dep/water/laws/regulati.htm#wl.

[7] U.S. Clean Water Act/Water Quality Act of 1987, (33 USC 1251-1376) Sections 401 and 404, November 2007. Accessed October 2012. http://epw.senate.gov/water.pdf.

[8] Section 10 of the Rivers and Harbors Act of 1899, (33 U.S.C 403), 1899.

[9] Protection of Wetlands, Executive Order 11990 42 FR 26961, May 24, 1977. Accessed October 2012. http://environment.fhwa.dot.gov/guidebook/vol1/doc14u.pdf.

for land subject to coastal storm flowage in the WPA; therefore, the potential USPS relocation site would meet all performance standards of the WPA.

3.3.5. Floodplains

Floodplains are protected by Federal Executive Order 11988: Floodplain Management.[10] Executive Order 11988 states that federal agencies have the responsibility to evaluate the potential effects of any actions it may take on floodplains and ensure that its programs take into consideration flood hazards and floodplain management. The Federal Emergency Management Agency (FEMA) is responsible for determining and updating flood hazard areas in the U.S. The U.S. Department of Transportation Order 5650.2, Floodplain Management[11] establishes policies and procedures for ensuring that proper consideration is given to the avoidance and mitigation of adverse floodplain impacts in agency actions, planning programs, and budget requests.

In Massachusetts, floodplains are protected under Massachusetts Executive Order No. 149[12] and as a regulated resource under the WPA.[13] Massachusetts Executive Order 149 designates the Department of Conservation and Recreation (DCR) as the state coordinating agency to assist in the implementation of the National Flood Insurance Program (NFIP). This Order also requires all state agencies to consider potential flood hazards and to avoid construction of state funded projects in floodplains. Additionally, to the extent possible, the Order directs state-administered grant and loan programs to avoid supporting construction in floodplains.

As presented in the revised FEMA Flood Insurance Rate Maps (FIRMs) for Suffolk County that took effect March 2016,[14] Reserved Channel and much of the surrounding area west and north toward the Boston Inner Harbor main channel contain both 100-year (zone AE) and 500-year (zone X) flood hazard areas. As indicated by FEMA, a 100-year flood would inundate the northern portion of the relocation site via overland flooding from the Boston Inner Harbor main channel. A 500-year flood would further inundate the site via flood waters from the Reserved Channel. Results of the flood risks for Boston from a more detailed evaluation using the Boston Harbor Flood Risk Model (BH-FRM) outputs published by MassDOT-FHWA[15] present a less severe outcome where minimal flood encroachment to portions of the north and northeastern areas of the relocation site would occur for both the 100-year and 500-year flood scenario.

3.3.6. Ecology

The potential USPS relocation site and adjacent terrestrial areas are developed urban land uses consisting of parking lots, buildings, and roadways. The relocation site has very limited vegetation and consists almost entirely of impervious surfaces. The relocation site is not anticipated to be used as habitat other than by opportunistic and potentially nuisance wildlife, and common birds of urban settings. There are no Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife present at the USPS relocation site and no

[10] Floodplain Management Executive Order 11988, May, 1977. Accessed October, 2012. http://www.fema.gov/library/viewRecord.do?id=1395.

[11] U.S. Department of Transportation Order 5650.2, Floodplain Management and Protection, April 23, 1979. Accessed October 2012. http://isddc.dot.gov/OLPFiles/DOT/007652.pdf.

[12] Massachusetts Executive Order No. 149: Federal Emergency Management Agency (FEMA) and Flood Plain Use, 1978. Accessed October 2012. http://www.lawlib.state.ma.us/source/mass/eo/eotext/EO149.txt.

[13] Massachusetts Wetlands Protection Act Regulations 310 CMR 10.00, June 2009, Accessed October, 2012. http://www.mass.gov/dep/water/laws/regulati.htm#wl

[14] FEMA, *Flood Insurance Rate Maps for Suffolk County Massachusetts*, Revised March 16, 2016.

[15] MassDOT-FHWA, *Pilot Project Report: Climate Change and Extreme Weather Vulnerability Assessments and Adaptation Options for the Central Artery*, June 2015.

federal or state endangered or threatened species are known to be present. No impacts to fisheries or other aquatic resources within the nearby Reserved Channel are anticipated.

3.3.7. Air Quality

The USPS GMF is located on the east side of the South Station complex and is to be demolished in its entirety. The air quality impacts of the demolition of the USPS facility are assessed as direct impacts in Section 3.14 of this EA. In general, there are four types of air pollution emissions, which could be emitted by the USPS facility in its new location:

- Construction of the facility;
- Building emissions – emissions from the building's heating/cooling system;
- Mail delivery vehicles – vehicles used to deliver mail to and pick up mail from the USPS facility; and
- Employee vehicles – vehicles driven by employees and parked at the new location.

Construction of the Facility

Construction-related activities can result in short-term impacts on ambient air quality. These potential impacts can include fugitive dust emissions, direct emissions from construction equipment and truck exhausts, and increased emissions from motor vehicles on local streets due to traffic disruption.

Fugitive Dust Emissions

Fugitive dust emissions can result from movement of construction equipment and transport of materials to and from a construction site. Dust emissions can also occur during site preparation activities such as building demolition, grading, or removal of vegetation to prepare a site for construction. Fugitive dust would generally be a problem during periods of intense construction activity and would be accentuated by windy and/or dry conditions. Construction of the proposed USPS facility must comply with MassDEP Regulation 310 CMR 7.09, which requires that dust impacts be mitigated. Uncovered construction vehicles that transport excavated material on local roadways can also result in fugitive dust emissions. Trucks traveling near residential and other sensitive receptor locations may aggravate these potential impacts.

Direct Emissions from Construction Equipment

Direct emissions from construction equipment and truck exhausts can result in short-term impacts on local air quality levels. Compared with emissions from other motor vehicle sources in the region, emissions from construction equipment and trucks are generally insignificant with respect to compliance with the ambient air quality standards. Requiring "clean diesel" practices for construction equipment such as Tier 4 engines or best available retrofit technology on older engines would help mitigate any temporary impacts. In accordance with EPA's Non-Road Diesel Rule, diesel engines used for construction equipment will be required to use the clean diesel to better enhance emission controls. When the equipment is properly operated and maintained, no adverse impacts on ambient air quality standards are expected.

Traffic Disruption and Congestion

Construction activities can also result in traffic disruption and rerouting. Traffic disruption, such as decreased roadway capacity or detouring, can lead to increased traffic congestion, thereby increasing motor vehicle exhaust emissions on nearby roadways, which could result in elevated localized pollutant

concentrations. Proper traffic management during the construction period can mitigate potential adverse effects.

Operations and Maintenance

In addition to the construction of the new USPS GMF, the operations of the facility will also result in air quality impacts. It is anticipated that the future impacts would be very similar to the operation of the current facility.

Building Emissions

Air pollutant emissions from the building's heating/cooling system will remain about the same as they are for the current USPS facility. This assumes that the size of the proposed building will be about the same square footage as the current building; that the number of employees will be about the same as employed at the current facility; and that the number of truck trips accessing the proposed facility are about the same as at the current facility.

Mail Delivery Vehicles

Mail delivery vehicles are large over the road trucks and other vehicles used to deliver mail to and pick up mail from the USPS facility. Air pollutant emissions from the mail delivery vehicles will vary somewhat, but will remain about the same as they are for the current USPS facility, as described below:

- Trips coming from the North will travel slightly farther along local roads (Summer Street/ Congress Street/ Seaport Boulevard) to get to the potential facility than they do to get to the current USPS location. Currently, these vehicles get off of I-93 and head to E Street to get to the current location. These vehicles will, instead, likely get off of I-93 and head to A Street to get to the potential USPS location. This difference is less than one-quarter mile;

- Trips coming from the East and West (particularly on I-90) will travel less on local roads, with a more direct connection to the new facility; and

- Trips coming from the South (i.e., from I-93) will essentially have the same travel distance to get to the new facility as they now travel to get to the existing USPS facility.

Employee Vehicles

Employee vehicles are vehicles driven by employees of the USPS facility to and from work. These vehicles are assumed to park onsite or very close to the new location. Air pollutant emissions from employee vehicles will vary somewhat, but will remain about the same as they are for the current USPS facility as presented below:

- Employee vehicles coming from the North will travel slightly farther along local roads (Summer Street/ Congress Street/ Seaport Boulevard) to get to the potential facility than they do to get to the current USPS location. Currently, these vehicles get off of I-93 and head to E Street to get to the current location. These vehicles will, instead, likely get off of I-93 and head to A Street to get to the potential USPS location. This difference is less than one-quarter mile;
- Employee vehicles coming from the East and West (particularly on I-90) will travel less on local roads, with a more direct connection to the potential facility; and

- Employee vehicles coming from the South (i.e., from I-93) will essentially have the same travel distance to get to the potential facility as they now travel to get to the existing USPS facility.

Emissions Due To Traffic Congestion

Mail delivery trucks and employee vehicles on their way to or from the potential USPS location would travel on several different surface roadways compared to their travel route to the existing facility. The revised travel routes would remove some traffic volumes from some roadways and increase traffic volumes on some different roadways. These very small changes in traffic volumes on specific roadways are unlikely to cause any changes (increases or decreases) in air pollutant emissions due to the existing traffic volumes currently using all of the roadways in the study area.

Based on the qualitative air quality assessment presented above, it is highly unlikely that emissions from the potential USPS relocation project would create a new violation of any of the National or Massachusetts Ambient Air Quality Standards; would increase the frequency or severity of any existing violations; or would delay the attainment of any National or Massachusetts Ambient Air Quality Standards.

3.3.8. Noise and Vibration

This section presents a qualitative assessment of the potential indirect noise and vibration impacts of the potential relocation of the USPS GMF as part of the NEPA process for the SSX project. The nearest noise sensitive receptors to the potential relocation site are the office buildings on Summer Street and Fargo Street (approximately 200 feet away), the residential apartment buildings on D Street (800 feet), and the Boston Convention and Exhibition Center (1,300 feet). These noise sensitive receptors are all located to the west of the potential USPS site.

As part of the qualitative noise assessment for the USPS relocation, estimated noise levels in the area were compared to the noise levels from mail truck operations at the facility to determine the potential for impact. Typical hourly Leq noise levels in the area are estimated to range from 58-62 dBA primarily due to local street traffic and other industrial noise sources. The estimated noise levels from the mail truck operations at the USPS facility, based on a peak-hour estimate of 20 trucks per hour, would result in an hourly Leq noise level of 65 dBA at a distance of 50 feet. Extrapolating this noise level to the distance of the nearest noise sensitive receptors (using a typical point source noise reduction factor of 6 dB per doubling of distance) would result in an hourly Leq level of 53 dBA at the office buildings on Summer Street and Fargo Street; 41 dBA at the residential apartment buildings on D Street; and 37 dBA at the Boston Convention and Exhibition Center. Since these levels are below the estimated noise levels in the area of 58-62 dBA, no impact is expected from the operations at the new location for the USPS facility. However, a more detailed noise assessment for the potential USPS relocation would need to be performed as part of the environmental documentation for the relocation project.

The operation of mail trucks in the area is not expected to generate vibration impacts. The vibration levels from the mail trucks (rubber tired vehicles) would be below 65 VdB at a distance of 50 feet, which is below the impact criterion of 72 VdB for human annoyance.

3.3.9. Site Contamination and Hazardous Materials

This section addresses the potential for site contamination and/or the presence of hazardous materials at or in the immediate vicinity of the potential USPS relocation site, resulting from current or present uses of the site or adjacent areas. The study area for the evaluation of site contamination, including soil and groundwater contamination, is defined as the site boundary where permanent or temporary construction is likely to take place. Additionally, it identifies federal and state requirements should the USPS GMF

construction and operation impact those materials. Contaminated materials include potentially harmful substances that may be present in soil or groundwater at the site and that may pose a threat to human health or the environment.

Site contamination is regulated through multiple federal and state regulations. MassDEP implements the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000, to address releases or threats of releases of Oil and Hazardous Material (OHM) into the environment.[16] The applicable regulations for Asbestos Containing Material (ACM) are the U.S. EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP)[17] and the Massachusetts Air Pollution Control Regulations.[18]

MassDOT has conducted an initial investigation for site contamination and/or the presence of hazardous materials at the Reserved Channel site. The initial investigation included a review of selected local, state, and federal regulatory agency databases for listings of the property and for sites within the vicinity (one-quarter mile) of the property.[19]

Initial investigations indicate that there are no federal or state listings located on the potential relocation site for the USPS GMF. A total of 250 listings are located within one-quarter mile of the potential relocation site. Of that total, 91 listings are located less than one-eighth mile from the site.

Summary of Potential Sources of Contaminated Soil or Groundwater Proximate to the USPS Relocation Parcel

In accordance with the MCP, MassDEP assigns Release Tracking Numbers (RTNs)[20] and classifications to releases based upon the permanent and temporary measures taken to eliminate such hazards to the environment.

Based on a database search of MassDEP files, there are no instances of an historic release or threat of release into the environment within the boundaries of the Reserved Channel site. There are 26 sites with an historic release located within one-eighth mile of the relocation site. Four of the RTNs were closed with a Class A-1 Response Action Outcome (RAO), indicating that a Permanent Solution has been achieved.[21] The level of OHM has been reduced to background, and no likely residual contamination exists. Ten of the RTNs were closed with a Class A-2 RAO, indicating that that a Permanent Solution has been achieved; however, the level of OHM has not been reduced to background, and some likely residual contamination exists. Four of the RTNs were closed with an Activity and Use Limitation (AUL) placed on the site, indicating that land use controls were implemented at the site to minimize human or ecological exposure to contamination. At four sites, MassDEP determined that an RAO was not required, no further action was required, or no permit was required for cleanup. At three sites, a Utility Release Abatement Measure (URAM) was implemented.

[16] Per the Massachusetts Contingency Plan (310 CMR 40.0000), a release is defined as any spilling, leaking, pumping, pouring, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, excluding certain emissions or applications of pesticides, fertilizer, or residuals.

[17] Environmental Protection Agency 40 CFR Part 61.

[18] MassDEP Regulation 310 CMR 7.15.

[19] Environmental Data Resources (EDR), Inc., *EDR Summary Radius Map Report, South Station Expansion Project*. Inquiry Number: 3378951.2s, November 30, 2015.

[20] Release Tracking Numbers are the file numbers assigned by MassDEP to a release or threat of release.

[21] A Permanent Solution is defined as a measure or combination of measures which will, when implemented, ensure attainment of a level of control of each identified substance of concern at a disposal site or in the surrounding environment such that no substance of concern will present a significant risk of damage to health, safety, public welfare, or the environment during any foreseeable period of time (No Significant Risk).

Potential Impacts and Mitigation

The results of the database search indicate that potential relocation of the USPS GMF to the Reserved Channel site would not likely result in significant issues associated with the historic releases at the site. Due to the historic industrial use of the Reserved Channel site, however, prior to new facility construction, a Phase I ESA would need to be conducted at the site to identify Recognizable Environmental Conditions (RECs).[22] The Phase I ESA would include limited site reconnaissance to make observations for evidence of a release or threat of release of OHM to the environment. It would also involve a limited review of adjoining properties to identify the potential for use of OHM that could affect the Reserved Channel site. Should RECs be identified at the sites, Phase II subsurface investigations could be required to further evaluate potential subsurface contamination.

4. Cumulative Impacts

Cumulative impact is the effect on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such actions.

This cumulative impact assessment considered both public transportation improvements and private developments. Public transportation improvements were identified through review of Amtrak Master Plans, including the *Vision for the New England High Speed and Intercity Rail Network*, and the *Massachusetts Department of Transportation Rail Plan* (September 2010) and state transportation plans, including the Boston Metropolitan Planning Organization's (MPO) *Long Range Transportation Plan: Charting Progress to 2040* (July 2015) and the *LRTP Amendment Development—Charting Progress to 2040* (July 7, 2016). Private developments were identified from the Boston Redevelopment Authority's (BRA) lists of reviews under Article 80, and BRA Master Plans were also consulted.

The time horizon evaluated for the purposes of forecasting future SSX travel/transit demand was 2035. The public and private development projects that were assumed to be in place for the regional transportation analysis, and that comprise the basis for this cumulative impact assessment, are described in the following sections.

The study areas vary depending on the parameter evaluated. For instance, the cumulative transportation analysis considers the ridership immediately affected at South Station and the economic impacts are both far-reaching (impacts on the NEC from Boston to Washington) and immediate (South Boston Waterfront). For land-based impacts, the cumulative impact assessment focused on the immediate impacts on the South Boston Waterfront adjoining South Station. The following sections present the projects considered, and review the cumulative impacts of the No Build and Build Alternatives.

4.1. Proposed Projects

4.1.1. Public Transportation Improvements

The public transportation improvements that need to be considered when examining the cumulative impacts of the SSX project include plans for improving Amtrak passenger rail service in the Northeast, as well as MBTA commuter rail and rail/bus transit improvements. The public transportation improvements identified

[22] Recognized Environmental Concern (REC) is a term used to identify environmental liability within the context of a Phase I Environmental Site Assessment, defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

in Amtrak Master Plan documents and state and regional transportation plans, including the Massachusetts Rail Plan (2010), the Boston MPO Long Range Transportation Plan (2015 LRTP), and the Boston MPO *Transportation Improvement Program Federal Fiscal Years 2017-2021*, and State Transportation Improvement Programs for 2016-2020 (Final) and 2017-2021 (Draft) include the following:

- **Northeast Corridor (NEC)** — Massachusetts and the other corridor states are working on the necessary environmental and planning documents to allow significant investment in the corridor for Amtrak and commuter trains. The recently completed *NEC Infrastructure Master Plan*[23] identifies more than $50 billion in rail projects on the corridor whose completion will advance the Northeast Governors' goal of doubling the number of riders on the corridor by 2030. The NEC FUTURE project, one of these ongoing initiatives, consists of a comprehensive planning effort launched by FRA in 2012 to define, evaluate, and prioritize future investments in the NEC. A tiered environmental review process for NEC Future is underway, including preparation of a Tier 1 Environmental Impact Statement (EIS).[24] The Tier 1 Draft EIS was published in November 2015, and the Tier 1 Final EIS was published in December 2016. The selected alternative FRA identified in the Tier 1 Record of Decision for the NEC FUTURE program (www.necfuture.com) will be implemented incrementally and in coordination with the phasing of the SSX project.
- **Northern New England Intercity Rail Initiative** — Massachusetts and Vermont are using FRA planning grants to study development of High Speed and Intercity Passenger service along two routes. The project analyzes the expansion of passenger rail by directly connecting Boston with Springfield, via what is commonly known as the Inland Route. The Inland Route extends from Boston South Station to New Haven via Springfield, and the second route, from Boston to Montreal uses the same route through Springfield. This study will identify a set of improvements necessary to operate high-speed passenger rail service along the route. A tiered environmental review is underway, including preparation of a Tier 1 Environmental Assessment, published in June 2016.
- **South Coast Rail Project —** The South Coast Rail project involves restoring commuter rail service from South Station in Boston to the South Coast of Massachusetts. Since service to this area ended in 1959, the cities of Taunton, Fall River, and New Bedford are the only cities within 50 miles of Boston that are not served by commuter rail. South Coast Rail will reconnect Boston to this long-underserved region, including Fall River and New Bedford – the fourth and fifth largest cities in the Commonwealth, providing access to jobs, spurring economic vitality, and attracting new business and investments. This will result in greater overall mobility for South Coast residents, will reduce congestion on Route 24, and will provide more transportation options in that region of the Commonwealth. Design of the South Coast Rail is included in state appropriations, as identified in the 2015 Long Range Transportation Plan (LRTP). A review of design options is underway.
- **Fairmount Line Improvement Project —** The 9.2 mile Fairmount commuter rail line as originally configured, ran from South Station, serving four stations (Uphams Corner, Morton Street, Fairmount, and Readville) in the communities of Dorchester, Mattapan, and Hyde Park, and terminated in the Readville section of Boston. The Fairmount Line Improvement project includes the completed rehabilitation of the existing Uphams Corner and Morton Street Stations, and construction of four new stations – Newmarket, Four Corners/Geneva, Talbot Avenue, and Blue Hill Avenue, three of which have been completed. The stations and other system upgrades (including new trolley fleet) were proposed to enhance future service, allowing for increased frequency on the line. The 2015 LRTP and the 2040 LRTP Amendment indicate that the remaining cost of the Blue Hill Avenue Station is covered under the plan, with community input to be obtained in the station design.
- **Green Line Extension —** The Green Line Extension project — the purpose of which is to improve

[23] NEC Master Plan Working Group, *NEC Infrastructure Master Plan*. May 2010. https://nec.amtrak.com/content/northeast-corridor-infrastructure-master-plan

[24] About NEC Future: Overview http://necfuture.com/about/

corridor mobility, boost transit ridership, improve regional air quality, ensure equitable distribution of transit services, and support opportunities for sustainable development — would extend the MBTA Green Line, originally envisioned in two separate phases. Phase 1 would extend the Green Line from a relocated Lechmere Station in East Cambridge to College Avenue in Medford, with a branch to Union Square in Somerville. Phase 2 would have further extended the Green Line from College Avenue to Mystic Valley Parkway (Route 16) at the Somerville/Medford municipal boundary. The Green Line Extension will provide greater mobility, economic opportunity, and environmental benefits for one of the densest corridors in New England. The Green Line construction is included in 2015 LRTP and the Boston MPO TIP 2016-2020, with a review underway to determine project elements that may be completed.

- **Allston I-90 Interchange/Potential West Station —** Built as part of the Massachusetts Turnpike Extension in 1964-1965, the Allston Interchange is home to a major toll plaza. The configuration of the interchange, which shifts to the north from I-90's east-west orientation, was constructed to avoid Beacon Park Yard. The Allston Viaduct, which is immediately east of the Interchange, dates from 1965 and is nearing the end of its useful design life. MassDOT is currently converting the entire Massachusetts Turnpike to all electronic tolling (AET) which will operate at highway speeds. Under these new conditions, the curving alignment at the Allston Interchange can be reduced. In addition, the Beacon Park Yard loading area will be eliminated and the track reconfigured to accommodate future commuter rail expansion and a station, and to maintain Grand Junction Railroad connections. The Allston Viaduct will also be rebuilt to address its structural deficiencies. MassDOT will continue to advance a Project Development Process to determine how best to realign the interchange while improving transit, walking, and cycling connections on the local roads around the Interchange, particularly Cambridge Street in Allston. MassDOT has been engaging a task force team of local and regional stakeholders to determine the best way to reconfigure the Allston Interchange and improve the roadways around it. Beacon Park Yard was previously identified as a third layover facility alternative for the SSX project and is now subject to MEPA review as part of the I-90 Allston Interchange Improvement project. The decision to separate the Beacon Park Yard layover site from the SSX project and include it in the Allston project was done both to provide a more focused discussion of impacts in the affected community and to acknowledge the Allston project, including the construction of the Beacon Park Yard layover facility, is expected to advance to construction prior to South Station.
- **Silver Line Gateway —** The Silver Line Gateway Project will provide new, dedicated bus rapid transit (BRT) service connecting Chelsea and East Boston with South Station and the Seaport District. The project will extend the existing Silver Line service between Logan Airport, South Boston to the Blue Line and East Boston at Airport Station. The routing will follow the Ted Williams Tunnel and airport service roads to service East Boston. The route will continue into Chelsea where a new dedicated busway will be built in a former railroad right-of-way serving four new stations, terminating at a new, relocated Chelsea Station. Phase 1 includes the new busway construction in Chelsea, the four new BRT stations, and replacement of the Washington Avenue Bridge. Phase 2 includes the construction of the new BRT and relocated commuter rail Chelsea Station adjacent to the Mystic Mall. Construction of Phase 1 commenced in 2015.

4.1.2. Private Development Projects

This section provides an overview of ongoing, proposed, and recently completed developments in the South Station area. Pursuant to Article 80 of the Boston Zoning Code, "Development Review and Approval," the BRA is charged with reviewing the design of real estate developments and their effect on the surrounding community and the City as a whole, and requiring appropriate conditions for approval of such projects. The BRA maintains a database of projects in the City of Boston, which are subject to Article 80 review. Table 3 lists proposed and ongoing BRA Article 80 development projects located in the vicinity of South

Station, current as of September 2012. As shown in Table 3, approximately 23,400,000 sf of development is ongoing, proposed, or recently completed in the vicinity of the South Station site. The projects in the table represent the information that was current when the traffic model was developed and future ridership was projected.

Currently, the biggest growth area in the City of Boston is the South Boston Waterfront/Innovation District. According to a BRA March 2013 report, there were 1,101 units of housing under construction, all of which broke ground in 2012. Emblematic of the resurgence in the area and its growing attractiveness to innovative industries and technology is the relocation of the General Electric headquarters to a location within the Gillette Complex, across from Fort Point Channel. The company plans to relocate approximately 800 employees from its former headquarters in Connecticut to the South Boston Waterfront across the channel from South Station. The SSX ridership projections for future growth did not account for this and other more recent developments.

Table 3 — Development Projects in the South Station Vicinity

Project	Land Use	Size
Millennium Tower and Burnham Building	Mixed-Use (Residential, Office, Retail, Health Club/Spa, Restaurant, Parking)	1,185,000 SF
Millennium Place	Mixed-Use (Residential, Retail, Parking)	265 Residential Units 12,000 SF Retail
Parcel P-7a	Mixed-Use (Residential, Retail)	100,885 SF
45 Stuart Street	Residential	390,000 SF
Kensington Place	Mixed-Use (Residential, Retail/Office)	407,000 SF
120 Kingston Street / 10-12 Oxford Street (Hong Lok House)	Residential	332,370 SF
381 Congress Street	Residential	44 Residential Units 43,700 SF
100 Acres Project (including 49-63 Melcher Street, 319 A Street)	Mixed-Use (Residential, Office, Retail/Entertainment, Cultural/Education, Hotel)	5 Million SF
One Greenway	Mixed-Use (Residential, Retail)	325 Residential Units 5,500 SF Retail, 6,000 SF Community
South Station Air Rights	Mixed-Use (Office, Hotel, R&D)	1.8 Million SF
InkBlock	Mixed-Use (Residential, Retail)	548,900 SF
275 Albany Street	Mixed-Use (Residential, Hotel, Retail)	330,000 SF (Excluding Parking)
Seaport Square	Mixed-Use (Residential, Office, Retail/Entertainment, Cultural/Education, Hotel)	6.5 Million SF
Fan Pier	Mixed-Use (Residential, Office, Hotel, Retail, Cultural/Education)	3.3 Million SF
Pier 4	Mixed-Use (Residential, Hotel, Office, Retail/Restaurant)	1.0 Million SF
368 Congress Street	Hotel, Retail	120 Rooms 6,000 SF Retail
316-322 Summer Street	Office, Retail/Restaurant	140,100 SF
399 Congress Street	Residential, Retail, Extended Stay Hotel	360 Residential Units, 1,700 SF Retail, 28 Rooms
Congress Street Hotel	Hotel and ground floor retail	525,000 SF
49-63 Melcher Street	Office and ground floor retail	221,500 SF
319 A Street Rear	Residential	268,500 SF
Eleven West Broadway	Residential and retail	5,000 SF Retail, 64 Residential Units
Channel Center	Office, Parking, Park	901,430 SF
Convention Center Phase 2	Hotel with ground floor retail	337,300 SF

Source: Boston Redevelopment Authority as of October 2012, as presented in SSX DEIR Appendix 9 (Part 1), Traffic Analysis Technical Report. https://www.massdot.state.ma.us/southstationexpansion/Documents.aspx

4.2. No Build Alternative

The No Build Alternative consists of the existing transportation facilities and services and all future funded transportation improvement projects in the vicinity of South Station. It represents the base condition against which the future Build Alternative is measured. The cumulative effects of the No Build Alternative on the regional economic and transportation conditions are reviewed below. The more specific cumulative ridership and environmental impacts of the No Build Alternative are also addressed in the following sections.

4.2.1. Cumulative Impacts on Regional Transportation and Economic Development

The No Build Alternative will not meet the transit capacity requirements at South Station needed to accommodate both the other planned passenger rail and public transit improvements and private development projects recently built, underway, or planned. Without the additional track and layover facility capacity provided by the SSX project, improvements proposed for the NEC, Inland Route, South Coast Rail, and other projects operating out of South Station will be extremely limited in their ability to add service. The Massachusetts Rail Plan states:

> "*South Station is unable to handle the additional service that is set forward in the recent Northeast Corridor Infrastructure Master Plan (NEC Master Plan). The NEC Master Plan calls for an increase in service of 50 percent in both high-speed express service and cumulative intercity passenger service to Boston.*
>
> *In order to handle the expected service increases by both Amtrak and the MBTA Commuter Rail, it is proposed that South Station be expanded to 20 total tracks. In order to achieve this goal, the current United States Postal Service general mail facility will be relocated to a new location in South Boston. This expansion will help foster the growth in high-speed and other intercity service throughout the Northeast as well as improve service to the southern communities along the MBTA Commuter Rail line. The improvement in South Station would not only benefit Boston but would benefit the entire Northeast.*
>
> *The benefits of an expanded South Station include improvements for on-time performance and additional high-speed intercity service. With the system currently at operating capacity, constraints that influence on-time performance include terminal congestion, approach interlocking and traction power issues. Without the expansion, on-time performance will continue to be an issue.*
>
> *The expansion will also facilitate potential new passenger service along the Boston to New York corridor along the Inland Route. This is a designated HSIPR corridor and would both serve new markets and relieve capacity constraints on the main line between Boston, Providence and New Haven. The proposed Inland Route would service metropolitan areas of Worcester and Springfield, MA and New Haven, CT."*

According to the NEC Commission,[25] the NEC carries more than 700,000 passengers per day, including a workforce that contributes $50 billion annually to the national gross domestic product (GDP). An unexpected loss of all NEC service for one day alone could cost the nation nearly $100 million in added highway congestion, productivity losses, and other transportation impacts. Approximately 20% of the nation's GDP comes from the NEC service area, making operations at South Station, its northern terminus, critical to the nation's economic health.[26]

[25] NEC Commission. *Northeast Corridor Five-year Capital Plan, Fiscal Years 2016-2020*. April 2015.

[26] Federal Railroad Administration, *A Rail Investment Plan for the Northeast Corridor: Tier 1 Draft Environmental Impact Statement*, prepared as part of NEC Future, November 2015.

Other regionally significant rail improvement projects are vital to the economic health of Massachusetts. These passenger and commuter rail improvements would generate significant economic benefits, as well as reducing automotive use and related air quality emissions.

The attractions and venues on the Boston Waterfront (Boston Convention Center, Institute of Contemporary Art, and Cruiseport) attracted more than 3.4 million tourists and visitors in 2013. The Port of Boston, New England's largest seaport, supports roughly 50,000 jobs from 1,600 different companies.[27] In 2010, the City of Boston designated a portion of the South Boston Waterfront as the Innovation District, comprising 1,000 acres directly east of South Station across Fort Point Channel. Within Boston's Innovation District, 5,000 jobs have been created since 2010 at more than 200 small businesses.

Boston's economy and employment has steadily expanded since 2010, and this growth is projected to continue in the future. Since 2009, Boston's economy has grown at a rate of 4.8%, the highest among all major U.S. metropolitan areas.[28] In the study area, employment in 2035 is expected to increase, with the largest increases occurring in the South Boston Waterfront/Innovation District, the fastest growing urban area in the state.[29] Between 2000 and 2013, ten million square feet of development occurred in the South Boston Waterfront and added more than 4,100 residents and 7,700 jobs.[30]

The January 2015 *South Boston Waterfront Sustainable Transportation Plan* projects:

> "*Over the next two decades, another 17 million square feet of development is underway or planned, including 5,300 new residences, 6 million square feet of office space, nearly one million square feet of port and maritime-related uses, and more than a doubling of convention and hospitality space…Defined development and redevelopment projects are anticipated to add more than 17 million square feet in the Waterfront by 2035, a 72 percent increase over existing conditions. About another 10 million square feet of development are projected by the full Build-out, more than doubling land use over today. The substantial land use growth projected for the South Boston Waterfront translates to approximately 9,200 new residents and 22,900 new jobs in the Waterfront by 2035.*"

With the rapid growth and development occurring over the past few years in the waterfront, the SSX project becomes even more critical to support the economic growth and development now occurring and projected to continue in future years. The *South Boston Waterfront Sustainable Transportation Plan* indicates that future growth in peak period transit demand from South Station (aggregating anticipated growth in commuter rail and Red Line demand) to the Waterfront will total 50% in 2035, with a.m. peak hour demand anticipated to grow by 73%. All transit system routes are projected to be at or over capacity in 2035 [which the plan notes does not account for the introduction of the Silver Line Gateway improvements]. The *South Boston Waterfront Sustainable Transportation Plan* also notes that traffic growth in the Waterfront is projected at more than twice that of the region as a whole. Based on BRA-reviewed and approved Article 80 projects, the BRA anticipates over 28 million sf of development in the South Station study area.[31]

4.2.2. Ridership Impacts

The No Build Alternative would result in the following transportation ridership impacts. DEIR Appendix 9 (Part 3) - *Ridership Forecasting Technical Report*[32] provides details on the resulting transit system

[27] A Better City, *South Boston Waterfront Sustainable Transportation Plan*, January 2015: https://www.massdot.state.ma.us/Portals/17/docs/Studies/SBostonWaterfrontFullReport_jan2015.pdf.
[28] The Brookings Institution, *The 10 Traits of Globally Fluent Metro Areas: Boston*, 2013.
[29] SSX Improvements Project, Draft EIR Appendix 4 (Part 1)-Socioeconomic Conditions Technical Report.
[30] A Better City, *South Boston Waterfront Sustainable Transportation Plan*, January 2015.
[31] Boston Redevelopment Authority (BRA), "RE: South Station Expansion - BRA Database," E-mail/personal communication October 22, 2012.
[32] South Station Expansion Project. *Draft Environmental Impact Report, Appendix 9, Ridership Forecasting Technical Report*. October 2014. http://www.massdot.state.ma.us/southstationexpansion/Documents/DEIR.aspx

ridership increases, based on the Central Transportation Planning Staff's (CTPS's) travel demand modeling.

Table 4 —South Station Weekday Daily Combined Boardings and Alightings – No Build Alternative summarizes the transit ridership increases at South Station that would occur in the 2025 opening year and 2035 Build year scenarios for the No Build Alternative compared to existing conditions. Projected ridership growth between existing conditions and the No Build Alternative is a result of forecasted growth in population, households, and employment, as well as changes in land use and transit services.

Table 4 —South Station Weekday Daily Combined Boardings and Alightings – No Build Alternative

	Amtrak	Commuter Rail	Amtrak and Commuter Rail Total [a]	Red Line	Silver Line	Local Bus	Intercity/ Commuter Bus	Total [a]
Existing Conditions	4,100	42,000	46,000	54,000	12,700	2,900	12,200	128,000
2025 No Build Alternative	5,200	53,000	58,000	68,000	22,800	3,600	12,700	165,000
2035 No Build Alternative	5,500	56,000	61,000	72,000	25,600	3,800	12,800	175,000

Source: *Final SSX Ridership Results* provided in DEIR Appendix 9 (Part 3) - *Ridership Forecasting Technical Report*.
Note: All results rounded to the nearest 100, except for Commuter Rail, Red Line and Total results, which are rounded to the nearest 1,000.
[a] Total values are calculated using precise/unrounded results. As such, the sum of rounded individual ridership results may not add up to the rounded Total ridership results presented in this table.

In the No Build Alternative, increased frequencies on the Fairmount Line would contribute to the projected growth in commuter rail ridership at South Station. The proposed Silver Line Gateway project, combined with projected land use changes along the various Silver Line corridors, would result in substantial increases to Silver Line ridership at South Station between existing conditions and the No Build Alternative.

Total weekday daily ridership at South Station in the 2025 No Build Alternative is forecasted to be 165,000 combined boardings and alightings, a 29% increase over 2012 existing conditions. The forecasted ridership level in the 2035 No Build Alternative is 175,000 combined boardings and alightings, a 37% increase over 2012 existing conditions.

4.2.3. Air Quality and Greenhouse Gas Emissions

The existing greenhouse gas (GHG) stationary sources remain unchanged in the No Build Alternative. The transportation source emissions would change with time with or without the project. The No Build Alternative would have a total transportation emissions value of 28,159 metric tons of carbon monoxide (the primary GHG) per year without consideration for layover facilities. The layover emissions are assumed unchanged from the existing conditions case.

Large decreases in localized pollutant emissions in the vicinity of South Station between 2012 and 2025 are anticipated due to significant reductions in U.S. EPA-mandated pollutant emission factors. These significant reductions in emission factors would offset the growth of motor vehicle traffic and train volumes in the area around South Station. Small increases in pollutant emissions in the vicinity of South Station between 2025 and 2035 are anticipated, due to relatively small reductions in U.S. EPA pollutant emission factors from 2025 to 2035. These small reductions in emission factors would not completely offset the growth of traffic and train volumes in the area around South Station.

4.2.4. Land-Based Environmental Impacts

The environmental impacts of the No Build Alternative largely relate to adverse regional economic and transportation impacts described above. Under the No Build Alternative, there would be no additional land use or environmental impacts beyond those associated with other currently proposed and planned public and private development projects. If the continuing development within the Seaport District is constrained or capped under the No Build Alternative, as recommended in the city's Master Planning documents, one-third of the proposed build out in South Boston waterfront would not take place. Since most of this development is occurring on either previously developed or vacant developed lands, this would not necessarily result in a substantial reduction in environmental impacts, such as impacts on natural resources. However, this would involve adverse impacts on the growth of the Boston economy, constraining both housing growth and employment gains.

4.3. Build Alternative

See EA Section 2.3 for detailed description of the Build Alternative. The Build Alternative would:

- Acquire and demolish the USPS Facility;
- Reopen Dorchester Avenue and extend the Harborwalk;
- Expand the South Station Terminal; and
- Construct rail layover facilities.

4.3.1. Cumulative Impacts on Regional Transportation and Economic Development

The South Station improvements are needed to address growing Amtrak passenger rail and MBTA transit demands, as well as intercity bus travel. The NEC FUTURE Project Tier 1 Final EIS[33] indicates that growth in non-highway travel outpaced highway travel between 2006 and 2012, with the highest percentage growth in travel in intercity rail. During this time period, total passenger trips on the public transportation network increased approximately 18% from 4.39 billion to 5.17 billion passenger trips. Intercity rail ridership increased throughout the NEC by approximately 24% between 2006 and 2012. The NEC FUTURE Tier 1 Final EIS reported that the historic increase in intercity ridership over this time period at South Station was 46%, increasing from 988,842 trips in 2006 to 1,447,501 trips in 2012. The NEC FUTURE Tier 1 Final EIS also selected a Preferred Alternative. The benefits of the Preferred Alternative include:

[33] FRA released the NEC FUTURE Tier 1 Final EIS in December 2016. http://www.necfuture.com/tier1_eis/feis/

- Maintains and improves service on the existing NEC between Washington, D.C., and Boston;
- Provides a mix of services (Intercity, Intercity-Express and Intercity-Corridor and Regional rail);
- Provides for upgrades to the communication and signaling systems where needed to permit higher-density operations; and
- Modernizes the NEC catenary system to support higher speeds and includes electrification of new segments.

With the SSX project, the proposed Amtrak intercity passenger rail expansions planned as part of the NEC FUTURE could be implemented, along with other south side commuter rail improvements planned by Amtrak/MBTA. The NEC FUTURE Final EIS includes a review of all the of the potential cumulative impacts of the NEC FUTURE project.[34] The implementation of the SSX project would also support the projected total buildout of the South Boston Waterfront/Innovation District planned by the City of Boston. Both of these (NEC improvements and continuing development of the Boston Innovation District) represent substantial economic gains for the greater Northeast region, the city of Boston, and the nation as a whole.

The economic gains associated with the Build Alternative are substantial, with implications for the entire NEC service area (comprising 20% of the nation's gross domestic product) and would obviate the need to cap (by one-third) the full buildout of the South Boston Innovation District.

The SSX project, by itself, is anticipated to create approximately 200 jobs at South Station headhouse and will relocate approximately 1,000 USPS jobs (to the South Boston Waterfront). The layover facility at Widett Circle will directly displace approximately 30 businesses and will result in a local reduction in the tax base. However, this will be more than offset by indirect economic benefits accruing from "permissible" development facilitated in the South Boston Waterfront area.

The effects of the Build Alternative on the transportation and air quality conditions are reviewed below. The more specific ridership and environmental impacts of the Build Alternative are also addressed.

4.3.2. Ridership, Traffic, and Parking Impacts

Much of the transportation analysis for the SSX project was based on the development of existing conditions and 2035 travel demand forecasts provided by CTPS, and assumes that a number of proposed transportation projects (consistent with the currently adopted state Long Range Transportation Plan) will be implemented by the 2035 Build year, as described in the preceding sections. Other proposed transportation projects not included in the currently adopted RTP are not accounted for in the travel demand forecasts. Land use assumptions for the South Station area were approved by the BRA and the MPO for the Boston region, and include a number of development projects that were assumed to occur before the 2035 Build year, as described in Table 3 in the preceding section.

Table 5 summarizes the transit ridership increases at South Station that would occur in the 2025 opening year and 2035 Build year scenarios for the SSX Build Alternative, compared to existing conditions and the No Build Alternative.

[34] The NEC FUTURE Final EIS, Section 7.20, reviews the potential cumulative impacts of the NEC FUTURE project. http://www.necfuture.com/tier1_eis/feis/chapter_07_20.aspx

Table 5 — South Station Weekday Daily Combined Boardings and Alightings – Build Alternative

	Amtrak	Commuter Rail	Amtrak and Commuter Rail Total [a]	Red Line	Silver Line	Local Bus	Intercity/ Commuter Bus	Total [a]
Existing Conditions	4,100	42,000	46,000	54,000	12,700	2,900	12,200	128,000
2025 No Build Alternative	5,200	53,000	58,000	68,000	22,800	3,600	12,700	165,000
2035 No Build Alternative	5,500	56,000	61,000	72,000	25,600	3,800	12,800	175,000
2025 Build Alternative	8,100	65,000	74,000	70,000	23,200	3,600	12,500	183,000
2035 Build Alternative	9,300	72,000	81,000	74,000	26,100	3,800	12,600	198,000

Source: *Final SSX Ridership Results* provided in DEIR Appendix 9 (Part 3) - *Ridership Forecasting Technical Report*.
Note: All results rounded to the nearest 100, except for Commuter Rail, Red Line, and Total results, which are rounded to the nearest 1,000.
[a] Total values are calculated using precise/unrounded results. As such, the sum of rounded individual ridership results may not add up to the rounded Total ridership results presented in this table.

In the 2025 opening year, the Build Alternative would increase daily total Amtrak intercity passenger rail, MBTA commuter rail/transit trips (both boardings and alightings) at South Station by 18,000, an increase of approximately 28%, compared to the No Build Alternative. Compared to existing conditions, the Build Alternative would increase boardings and alightings by 55,000, an increase of 43%.

In the 2035 Build year, the Build Alternative would increase daily total Amtrak intercity passenger rail, MBTA commuter rail/transit trips (both boardings and alightings) at South Station by 23,000, an increase of approximately 33%, compared to the No Build Alternative. Compared to existing conditions, the Build Alternative would increase boardings and alightings by 70,000, an increase of 55%.

The Build Alternative would not provide new or replacement structured parking; as a result, there would be a net decrease of 242 structured parking spaces on the site due to the relocation of the USPS facility.

MassDOT analyzed 21 intersections in the South Station area and two intersections at the layover facilities and identified eight intersections where operations could be improved for traffic flow and pedestrian and bicycle mobility. At all but one intersection (Summer Street at Dorchester Avenue), traffic operations would improve or remain the same, and at this intersection, LOS would be acceptable (LOS D or better).

4.3.3. Air Quality and Greenhouse Gas Emissions

The regional analysis of emissions of the primary transportation-related greenhouse gas, carbon dioxide (CO_2), show a decrease in regionwide CO_2 associated with the transportation improvements of SSX of approximately 46,000 tons/year.[35] The GHG impacts show an approximately 5% net reduction in CO_2 emissions from locomotives in the immediate vicinity of South Station, associated with decreased congestion and idling time on tracks. As a result of compliance with the Massachusetts Stretch Energy Code, project-related stationary source GHG emissions at South Station would be reduced by approximately 8%.[36]

[35] South Station Expansion Project, Draft Environmental Impact Report, Appendix 12 – Greenhouse Gas Emissions Technical Report.
[36] *Ibid.*

The results of the carbon monoxide modeling analysis at the selected traffic intersections in the study area indicate that increases in project-related motor vehicle traffic volumes would not lead to exceedances of the NAAQS or the MAAQS for CO, and no adverse air quality impacts are expected to occur as a result of the project.

Cumulatively, the project is expected to result in positive air quality/greenhouse gas emissions, with the increase in ridership and concomitant reduction in automotive travel.

4.3.4. Land-based Environmental Impacts

The Build Alternative is not anticipated to involve substantial direct land-based alterations or environmental impacts. However, if the SSX project is constructed, it would not impose constraints on full buildout of the South Boston/Innovation District as planned by the City of Boston. The SSX project would support the growth projected by the City of Boston in the immediate vicinity of South Station by converting a large industrial stretch of restricted access waterfront into a public transportation facility with public access to the waterfront and the potential for additional future private development. The expansion of the capacity of South Station will also support the projected commercial and residential growth in the area by providing additional public transportation service for employees and residents.

The Seaport District, across the Fort Point Channel, includes large parking lots and vacant or industrialized lands, and adaptive reuse of industrial buildings is occurring with relatively low hurdles to future development. Most of the development is occurring in already built up upland or filled areas, so this is not anticipated to result in substantial impacts on undeveloped land and the natural environment or protected resources. In those areas with historic buildings, the redevelopment is occurring largely through rehabilitation or reuse of historic buildings. This anticipated ongoing and planned future development is not anticipated to substantially impact or alter cultural resources (aboveground historic and belowground archaeological resources).

Beyond the South Boston Waterfront, the projects with the largest potential cumulative land impacts include the NEC FUTURE and the South Coast Rail projects. The NEC FUTURE is addressing impacts through the tiered environmental review, and includes the recent preparation of the Tier 1 Draft EIS.

A FEIS/FEIR was prepared for South Coast Rail in August 2013. Although expansion of transit service to Fall River and New Bedford, if eventually funded and constructed, may spur development in these underserved areas, MassDOT has undertaken an initiative to protect communities and the natural environment while also finding ways to shape new economic and housing growth. MassDOT and the Executive Office of Housing and Economic Development developed the *South Coast Rail Economic Development and Land Use Corridor Plan* (June 2009) to help guide investments in infrastructure and land protection. The plan includes: 1) station area concept plans for transit-oriented development; 2) a Priority Map, showing what places are priorities for environmental preservation and what areas should be targeted for redevelopment or new development; and 3) state policy commitments to support the implementation of the Priority Map by targeting infrastructure and open space funds.

4.3.5. Summary and Conclusions

The SSX project is critical to regional economic growth, as it supports both the NEC FUTURE initiatives and projected build-out occurring in the South Boston Waterfront, the fastest growing urban area in the Commonwealth. The SSX project will improve Amtrak intercity passenger rail/MBTA commuter rail/transit ridership, reduce greenhouse gas emissions, and will not result in substantial impacts, beyond those associated with supporting the continued economic growth and expansion already occurring on the NEC and in the South Boston/Innovation District.

Appendix C – Section 7 Agency Correspondence

Letters to Agencies

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Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Edward O'Donnell
Chief
U.S. Army Corps of Engineers, Navigation Section
New England District
696 Virginia Road
Concord, MA 01742-2751

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. O'Donnell:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

- Expanding the South Station terminal facilities, including the addition of tracks and platforms, extension of some existing platforms, and construction of a new passenger concourse and other amenities.
- Demolition of the existing U.S. Postal Service general mail facility located on Dorchester Avenue, adjacent to South Station. Restoring Dorchester Avenue for public and station access, including the construction of an extension of the Boston Harborwalk.
- Providing for the possibility of future joint development at an expanded South Station.
- Creating a new MBTA vehicle layover facility for midday use.

The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to request information regarding navigational issues of concern for the Fort Point Channel. Our understanding is that the Fort Point Channel is considered non-navigable under 36 CFR 56.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Alan Anacheka-Nasemann
U.S. Army Corps of Engineers, Regulatory Division
New England District
696 Virginia Road
Concord, MA 01742-2751

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr.Anacheka-Nasemann:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Gary Kassof
Commander (obr)
U.S. Coast Guard
First Coast Guard District
Battery Park Building
New York, NY 10004-5073

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. Kassof:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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We are writing to request information regarding navigational/regulatory issues of concern related to the Fort Point Channel. Our understanding is that the Fort Point Channel is considered non-navigable under 36 CFR 56.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

cc: John MacDonald, USCG

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

John MacDonald
U.S. Coast Guard
First Coast Guard District
408 Atlantic Avenue
Boston, MA 02210-2209

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. MacDonald:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

cc: Gary Kassof, USCG

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Michael Amaral
U.S. Fish and Wildlife Service
70 Commercial Street, Suite 300
Concord, NH 03301-5087

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. Amaral:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to request information on the presence of federally endangered or threatened species or critical habitats in the project area.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Lou Chiarella
F/NER4r
National Marine Fisheries Service, Habitat Conservation Program
55 Great Republic Drive
Gloucester, MA 01930-2298

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. Chiarella:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to request information regarding the presence of essential fisheries habitat under the Magnuson-Stevens Fishery Conservation and Management Act and seasonal restrictions for

identified habitats. Information on the occurrence of marine or migratory fisheries habitat and other protected species in the project area would also be of interest.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

cc: Mary Colligan, NMFS Protected Resources

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Mary Colligan
Assistant Regional Administrator
National Marine Fisheries Service, Protected Resources
55 Great Republic Drive
Gloucester, MA 01930-2298

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Ms. Colligan:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to request information on the presence of federally endangered or threatened species or critical habitats in the project area and seasonal restrictions for identified habitats.

Ten Park Plaza, Suite 3170, Boston, MA 02116
Tel: 617-973-7000, TDD: 617-973-7306
www.mass.gov/massdot

Information on the occurrence of marine or migratory fisheries habitat and other protected species in the project area would also be of interest.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

cc: Lou Chiarella, NMFS Habitat Conservation Program

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Paul Diodati
Director
Massachusetts Division of Marine Fisheries
251 Causeway Street, Suite 400
Boston, MA 02114

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. Diodati:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to request information on marine species in the project area. We would like to request information on state-protected species, migratory species of concern, and seasonal

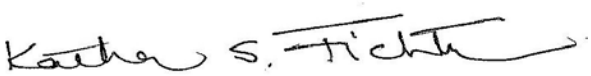
restrictions for identified habitats. Information on the occurrence of submerged aquatic vegetation and shellfishing and stocking programs would also be of interest.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,



Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Tay Evans
Director
Massachusetts Division of Marine Fisheries
Annisquam River Marine Fisheries Field Station
30 Emerson Avenue
Gloucester, MA 01930

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Ms. Evans:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

Ten Park Plaza, Suite 3170, Boston, MA 02116
Tel: 617-973-7000, TDD: 617-973-7306
www.mass.gov/massdot

We are writing to request information on marine species in the project area. We would like to request information on state-protected species, migratory species of concern, and seasonal restrictions for identified habitats.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Massachusetts Division of Fisheries and Wildlife
Natural Heritage and Endangered Species Program
North Drive, Route 135
Westborough, MA 01581

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Sir/Madam:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to request information on the presence of state-protected species, critical habitats, and exemplary natural communities in the project area. We have enclosed a Natural Heritage Data Release Form for South Station.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map
Natural Heritage Data Release Form

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Dean Savramis
Civil Engineer
Federal Emergency Management Agency, Region I
99 High Street, 6th Floor
Boston, MA 02110

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. Savramis:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to inquire about FEMA flood mapping and floodplain issues of concern. We have collected the following information from the FEMA website:

Suffolk County Flood Insurance Study (2009)
City of Boston Flood Insurance Rate Map Panel 25025C0081G (2009)

We are looking for any updates to this information or any additional information for the project location.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
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Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Ben Lynch
Program Chief
Massachusetts Department of Environmental Protection, Waterways Division
One Winter Street
Boston, MA 02108

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. Lynch:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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- Providing for the possibility of future joint development at an expanded South Station.
- Creating a new MBTA vehicle layover facility for midday use.

The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to request information regarding issues of concern regarding Chapter 91 for the proposed work along the Fort Point Channel. Information regarding designated port areas and navigational uses of concern is also requested.

Ten Park Plaza, Suite 3170, Boston, MA 02116
Tel: 617-973-7000, TDD: 617-973-7306
www.mass.gov/massdot

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Edward Lambert
Commissioner
Massachusetts Department of Conservation and Recreation
251 Causeway Street, Suite 900
Boston, MA 02114-2104

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. Lambert:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

- Expanding the South Station terminal facilities, including the addition of tracks and platforms, extension of some existing platforms, and construction of a new passenger concourse and other amenities.
- Demolition of the existing U.S. Postal Service general mail facility located on Dorchester Avenue, adjacent to South Station. Restoring Dorchester Avenue for public and station access, including the construction of an extension of the Boston Harborwalk.
- Providing for the possibility of future joint development at an expanded South Station.
- Creating a new MBTA vehicle layover facility for midday use.

The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to inform you that work may occur in areas adjoining the Fort Point Channel. Information regarding site conditions, existing site plans and mapping, DCR facilities, land uses, natural resource, and cultural resource information is requested. Information on existing and

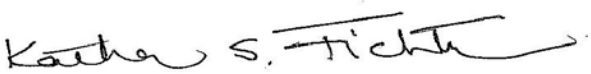
proposed facilities and property information in the project vicinity is also requested. Information regarding any Section 6(f) funding for the park and facilities in the area is also requested.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,



Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Leslie-Ann McGee
Director
Massachusetts Office of Coastal Zone Management
251 Causeway Street, Suite 800
Boston, MA 02114-2138

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Ms. McGee:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to request information regarding CZM consistency jurisdiction for the site on the Fort Point Channel. We are also requesting information on designated port areas/harbor plans and navigational users and uses in the vicinity of the project site.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Richard Zingarelli
Acting State Hazard Mitigation Officer/NFIP Coordinator
Massachusetts Department of Conservation and Recreation/ Floodplain Management
251 Causeway Street, Suite 800
Boston, MA 02114-2104

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. Zingarelli:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to inquire about FEMA flood mapping and floodplain issues of concern. We have compiled the following information from the FEMA website:

Suffolk County Flood Insurance Study (2009)
City of Boston Flood Insurance Rate Map Panel 25025C0081G (2009)

We are looking for any updates to this information or any additional information for the project location.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Natural Resources Conservation Service
Westford Service Center
319 Littleton Road, Suite 205
Westford, MA 01886-4133

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Sir/Madam:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to request copies of the soil survey and relevant soil maps and information/list of hydric soils and prime farmland soils for the project site in Boston in Suffolk County.

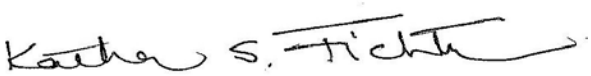
We are writing to request updated information for the Soil Survey of Suffolk County, Massachusetts (1989) and additional information, if any, you may have for the project site.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,



Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Federal Aviation Administration
New England Region
Airports Division
12 New England Executive Park
Burlington, MA 01803

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Sir/Madam:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to request information on aeronautical issues of concern, especially restrictions related to runway approach surfaces at Boston Logan International Airport. We are making a similar request for information to the Massachusetts Port Authority.

Ten Park Plaza, Suite 3170, Boston, MA 02116
Tel: 617-973-7000, TDD: 617-973-7306
www.mass.gov/massdot

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Mary Heffernan
Secretary
Executive Office of Public Safety and Security
One Ashburton Place
13th Floor Room 1301
Boston, MA 02108

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Ms. Heffernan:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Massachusetts DEP
Northeast Regional Office
Attn: MEPA Coordinator
205B Lowell Street
Wilmington, MA 01887

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear MEPA Coordinator:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

Ten Park Plaza, Suite 3170, Boston, MA 02116
Tel: 617-973-7000, TDD: 617-973-7306
www.mass.gov/massdot

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Erin Kinahan
Massachusetts DOT District 6 Office
Attn: MEPA Coordinator
185 Kneeland Street
Boston, MA 02111

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Ms. Kinahan:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Eric Bourassa
Metropolitan Area Planning Council
60 Temple Place/6th Floor
Boston, MA 01420

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. Bourassa:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to request information on existing land uses and proposed developments and plans for the areas adjoining the station.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Department of Agricultural Resources
Attn: MEPA Coordinator
16 West Experiment Station
University of Massachusetts
Amherst, MA 01003

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear MEPA Coordinator:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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South Station Expansion Project Manager
MassDOT Office of Transportation Planning
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Boston, MA 02116
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katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Massachusetts Department of Public Health
Attn: MEPA Coordinator
250 Washington Street
Boston, MA 02115

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear MEPA Coordinator:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

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Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Energy Facilities Siting Board
Attn: MEPA Coordinator
One South Station
Boston, MA 02110

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear MEPA Coordinator:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

- Expanding the South Station terminal facilities, including the addition of tracks and platforms, extension of some existing platforms, and construction of a new passenger concourse and other amenities.
- Demolition of the existing U.S. Postal Service general mail facility located on Dorchester Avenue, adjacent to South Station. Restoring Dorchester Avenue for public and station access, including the construction of an extension of the Boston Harborwalk.
- Providing for the possibility of future joint development at an expanded South Station.
- Creating a new MBTA vehicle layover facility for midday use.

The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Ten Park Plaza, Suite 3170, Boston, MA 02116
Tel: 617-973-7000, TDD: 617-973-7306
www.mass.gov/massdot

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Division of Energy Resources
Attn: MEPA Coordinator
100 Cambridge Street, 10th Floor
Boston, MA 02114

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear MEPA Coordinator:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

- Expanding the South Station terminal facilities, including the addition of tracks and platforms, extension of some existing platforms, and construction of a new passenger concourse and other amenities.
- Demolition of the existing U.S. Postal Service general mail facility located on Dorchester Avenue, adjacent to South Station. Restoring Dorchester Avenue for public and station access, including the construction of an extension of the Boston Harborwalk.
- Providing for the possibility of future joint development at an expanded South Station.
- Creating a new MBTA vehicle layover facility for midday use.

The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

Ten Park Plaza, Suite 3170, Boston, MA 02116
Tel: 617-973-7000, TDD: 617-973-7306
www.mass.gov/massdot

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Massachusetts Water Resource Authority
Attn: MEPA Coordinator
100 First Street
Charlestown Navy Yard
Boston, MA 02129

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear MEPA Coordinator:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

- Expanding the South Station terminal facilities, including the addition of tracks and platforms, extension of some existing platforms, and construction of a new passenger concourse and other amenities.
- Demolition of the existing U.S. Postal Service general mail facility located on Dorchester Avenue, adjacent to South Station. Restoring Dorchester Avenue for public and station access, including the construction of an extension of the Boston Harborwalk.
- Providing for the possibility of future joint development at an expanded South Station.
- Creating a new MBTA vehicle layover facility for midday use.

The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are also writing to request any plans showing MWRA facilities in the area.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 30, 2012

Stewart Dalzell
Deputy Director of Environmental Planning and Permitting
Massachusetts Port Authority
One Harborside Drive
East Boston, MA 02128

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. Dalzell:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

- Expanding the South Station terminal facilities, including the addition of tracks and platforms, extension of some existing platforms, and construction of a new passenger concourse and other amenities.
- Demolition of the existing U.S. Postal Service general mail facility located on Dorchester Avenue, adjacent to South Station. Restoring Dorchester Avenue for public and station access, including the construction of an extension of the Boston Harborwalk.
- Providing for the possibility of future joint development at an expanded South Station.
- Creating a new MBTA vehicle layover facility for midday use.

The attached materials provide more background on the South Station Expansion project. The attached map shows the South Station location. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

We are writing to request information on aeronautical issues of concern, especially restrictions related to runway approach surfaces at Boston Logan International Airport.

Ten Park Plaza, Suite 3170, Boston, MA 02116
Tel: 617-973-7000, TDD: 617-973-7306
www.mass.gov/massdot

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,

Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Appendix C – Section 7 Agency Correspondence

Agency Response Letters

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dcr
Massachusetts

November 6, 2012

Catherine S. Fichter
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review Project Notification and Request for Participation

Dear Ms. Fichter:

The Department of Conservation and Recreation ("DCR" or "Department") is pleased to submit the following comments in response to your October 30, 2012 correspondence regarding notification regarding the South Station Expansion Project (the "Project").

As described in your letter, the project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The work is proposed to expand the South Station terminal facilities; demolish and relocate the existing U.S. Postal Service general mail facility; provide for the possibility of future joint development at an expanded South Station; and create a new MBTA vehicle layover facility for midday use.

DCR reviewed the project location and determined that the Project will not affect any DCR resources, as the Department does not own and/or operate any facilities in the Project locus or immediate vicinity. Furthermore, DCR does not have any plans to locate any such facilities in the Project vicinity, and is not aware of prior use of Land and Water Conservation Fund (LWCF) funds to purchase Commonwealth recreation lands in the Project locus.

Thank you for this opportunity to comment. If you have questions or need further information regarding DCR assets, please contact Nat Tipton, MEPA Review Coordinator at (617) 626-1341 or nathaniel.tipton@state.ma.us.

Sincerely,

Edward M. Lambert, Jr.
Commissioner

cc: Mike Misslin, Bureau of Engineering
Joe Orfant, Bureau of Planning and Resource Protection

COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Department of Conservation and Recreation
251 Causeway Street, Suite 600
Boston MA 02114-2119
617-626-1250 617-626-1351 Fax
www.mass.gov/dcr

Deval L. Patrick
Governor

Timothy P. Murray
Lt. Governor

Richard K. Sullivan, Jr., Secretary
Executive Office of Environmental Affairs

Edward M. Lambert Jr., Commissioner
Department of Conservation & Recreation

From: Zingarelli, Richard (DCR)
To: Fichter, Katherine (DOT)
Cc: Bogdan, Kerry
Subject: South Station Expansion Project
Date: Friday, November 09, 2012 3:55:31 PM

Hello Katherine

I received your letter in the mail about the South Station Expansion Project. FEMA is indeed in the process of updating the Suffolk County flood insurance study, with new coastal analyses that could affect flood elevations in the project area. Please give me a call at your convenience, and I can update you on where we stand on study progress and the types of changes we have seen in similar studies.

Richard Zingarelli
MA DCR Flood Hazard Management Program
251 Causeway Street, Suite 600-900
Boston, MA 02114-2104
(617) 626-1406
(617) 626-1455 (fax)

Commonwealth of Massachusetts

Division of Marine Fisheries

30 Emerson Ave.
Gloucester, MA 01930
(978)282-0308
fax (617)727-3337

Paul J. Diodati
Director

Deval Patrick
Governor
Timothy P. Murray
Lt. Governor
Richard K. Sullivan, Jr.
Secretary
Mary B. Griffin
Commissioner

December 5, 2012

Katherine S. Fichter
Project Manager
MassDOT office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116

Dear Ms. Fichter,

Thank you for your letter of October 30, 2012 introducing the South Station Expansion Project and requesting information on fisheries resources in the vicinity. I've reviewed your letter and the information on the website. South Station and the post office building are adjacent to the Fort Point Channel. The Fort Point Channel is considered habitat for larval settlement and juvenile development of winter flounder (*Pseudopleuronectes americanus*) and may serve as refuge for migrating diadromous fish. Without a more detailed site plan there is not enough information to assess potential impacts to fisheries resources from the proposed project. For more information about fisheries resources in the Boston Harbor region including Fort Point Channel, with details about potential time of year restrictions for in- water, silt-producing work, please refer to *MarineFisheries* Technical Report TR-47 on our website. http://www.mass.gov/dfwele/dmf/publications/technical.htm.

Please send site plans when more project detail is available. Thank you for contacting *MarineFisheries*. If you have any questions about this review please contact me at our Gloucester office at tay.evans@state.ma.us or 978-282-0308 x. 168.

Sincerely yours,

N. Tay Evans
Environmental Reviewer

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
http://www.fws.gov/newengland

December 11, 2012

Reference: Project: South Station Expansion; Location: Boston, MA

Ms. Katherine S. Fichter
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116

Dear Ms. Fichter:

This responds to your recent correspondence requesting information on the presence of federally listed and/or proposed endangered or threatened species in relation to the proposed activity referenced above.

Based on information currently available to us, no federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area. Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required. No further Endangered Species Act coordination is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

To obtain updated lists of federally listed or proposed threatened or endangered species and critical habitats, it is not necessary to contact this office. Instead, please visit the Endangered Species Consultation page on the New England Field Office's website:

www.fws.gov/newengland/endangeredspec-consultation.htm

On the website, there is also a link to procedures that may allow you to conclude if habitat for a listed species is present in the project area. If no such habitat exists, then no federally listed species are present in the project area and there is no need to contact us for further consultation. If the above conclusion cannot be reached, further consultation with this office is advised. Information describing the nature and location of the proposed activity that should be provided to us for further informal consultation can be found at the above-referenced site.

Thank you for your coordination. Please contact Brett Hillman of this office at 603-223-2541, extension 34, if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

Joe Grilli

From: Glorioso, Lauren (FWE) <lauren.glorioso@state.ma.us>
Sent: Thursday, November 15, 2012 5:34 PM
To: katherine.fitcher@state.ma.us; Joe Grilli
Subject: Rare species information for South Station Expansion
Attachments: Information Request.pdf

Joe & Katherine,

The NHESP received the project narrative and Data Release form for the South Station Expansion project in Boston. Requesting species information for this project should proceed under the Information Request form process (form attached for your convenience); this project does not qualify for the Data Release from because the project is not intended for the habitat management of rare species.

Additionally, the Massachusetts Natural Heritage Atlas maps are publicly available on our website:
http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/online_viewer.htm

Please contact me if you have questions,

Sincerely,

Lauren Glorioso
Endangered Species Review Assistant
PLEASE NOTE NEW FIELD HEADQUARTERS ADDRESS (phone & email will not change)
Natural Heritage & Endangered Species Program | Division of Fisheries & Wildlife | 100 Hartwell Street, Suite 230 | West Boylston, MA 01583 | ph: 508-389-6361 | fax: 508-389-7890 | lauren.glorioso@state.ma.us | www.nhesp.org

MESA Information Request Form

Please complete this form to request site-specific information from the Natural Heritage & Endangered Species Program (Please submit only one project per request form).

Please include a check for $50.00 made out to the Comm. of MA - NHESP

Requestor Information

Name:

Affiliation:

Address:

City: State: Zip Code:

Daytime Phone: Ext. Email address:

Project Information

Project or Site Name:

Location: Town:

Name of Landowner or Project Proponent:

Acreage of the Property:

Description of Proposed Project and Current Site Conditions: (If necessary attach additional sheet)

☐ Will this project be reviewed as a Notice of Intent by the local Conservation Commission?

☐ Will this project be undergoing MEPA review for reasons other than rare species?

☐ Have you enclosed the required copy of a USGS topographic map in the scale 1:24,000 or 1:25,000 (not copy reduced) with the site location clearly marked and centered on the copy page? (Copies of Natural Heritage Atlas pages are not accepted)

Please **mail** this completed form and topographic map to:

Regulatory Review
Natural Heritage and Endangered Species Program
MA Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

Questions regarding this form should be directed according to the county that the property is located:
Berkshire, Essex, Franklin, Hampshire, Hampden, Middlesex & Worcester Counties call: 508-389-6361
Barnstable, Bristol, Dukes, Nantucket, Norfolk, Plymouth & Suffolk Counties call: 508-389-6364

Persons requesting information will receive a written response within 30 days of receipt of all information required. Please do not ask for an expedited review. *If you are requesting information for habitat management or conservation purposes and you are a non-profit conservation group, government agency or working with a government agency please fill out a Data Release Form.

From:	Mike R Johnson
To:	Fichter, Katherine (DOT)
Cc:	Chiarella, Lou
Subject:	South Station Expansion Project - NOAA
Date:	Wednesday, November 14, 2012 12:21:42 PM

Katherine,

We received your letter, dated October 30, 2012, regarding the MassDOT South Station Expansion Project. Your letter requested information on habitats and species within our regulatory authorities such as the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The Boston Harbor area has been identified as Essential Fish Habitat (EFH) for a number of managed species, and the proposed project appears to be adjacent to those waters. In addition, a number of other species under our mandated responsibilities (e.g., Fish and Wildlife Coordination Act, FWCA) occur in the Boston Harbor area, such as alewife, blueback herring, striped bass, American lobster, and American eel. More information on EFH, and MSA and FWCA consultations can be found at http://www.nero.noaa.gov/hcd/. Regarding time of year restrictions for work in Massachusetts waters, you may refer MA Division of Marine Fisheries report at http://www.mass.gov/dfwele/dmf/publications/tr_47.pdf/. NMFS follows the time of year windows contained with MA DMF's report.

If you have any questions, please contact me at this email or at 978-281-9130.

Thanks,

Mike

--
Michael R. Johnson
Habitat Conservation Division
National Marine Fisheries Service
Northeast Regional Office
55 Great Republic Drive
Gloucester, MA 01930
978-281-9130
http://www.nero.noaa.gov/hcd

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

NOV - 6 2012

Katherine S. Fitcher
Massachusetts Department of Transportation
10 Park Plaza, Suite 3170
Boston, Massachusetts 02116

RE: South Station Expansion Project

Dear Ms. Fitcher,

We have reviewed the project information contained in your October 30, 2012 letter regarding the proposed expansion of South Station, Boston, MA. Several species listed by NOAA's National Marine Fisheries Service (NMFS) occur in Massachusetts waters. Based on the project description, it does not appear that there will be any in-water work. As such, NMFS Protected Resources Division (PRD) does not intend to offer additional comments on the proposed project and no further coordination with NMFS PRD is necessary. Should project plans change to include in-water work or new information become available that changes the basis for this determination, further coordination should be pursued. If you have any questions regarding listed species, please contact Julie Crocker of my staff at (978) 282-8480 or by e-mail (Julie.Crocker@noaa.gov).

Sincerely,

Kimberly Damon-Randall
Acting Assistant Regional Administrator
for Protected Resources

EC: Crocker, F/NER3
Chiarella, F/NER4

File Code: Sec 7 No Species Present 2012

From:	Weiss, Julie - NRCS-CD, Westford, MA
To:	Fichter, Katherine (DOT)
Subject:	NRCS response to request info South Station Expansion
Date:	Wednesday, November 14, 2012 8:04:34 AM
Attachments:	Urbanland_Hydric.pdf South Station Soils.pdf South Station Farmland Classification.pdf South Station Highly erodible.pdf

---

Hello,

I am responding to your request for information for the MassDOT South Station Expansion Project. I have attached several documents as follows:
South Station Soils: Using the most current soil survey for Suffolk County (September 1989) this map shows that the area of interest is mapped as Urban land, wet substratum, 0 to 3 percent slopes.
South Station Farmland Classification: shows there are no prime farmlands or lands of statewide or unique interest in the area of interest.
South Station Highly erodible: details there are no highly erodible lands in the area of interest.
Urbanland Hydric: this is a page from the 11/1/1994 Comprehensive Hydric Soils list detailing that the land mapped as Urban land, wet substratum, 0 to 3 percent slopes has not been ranked by the agency.

As this land is highly developed land, not involved in agriculture at this time, our agency would have no issues of concern that should be considered in your planning process.

We would be happy to answer any further questions you may have concerning soils at this site.

Julie Weiss
Administrative Assistant
USDA/NRCS Westford
319 Littleton Road, Suite 205
Westford, MA 01886-4133
Tel: 978-692-1904 Fax: 978-392-1305
julie.weiss@ma.usda.gov

South Station Area
Farmland Classification Map
Boston, MA

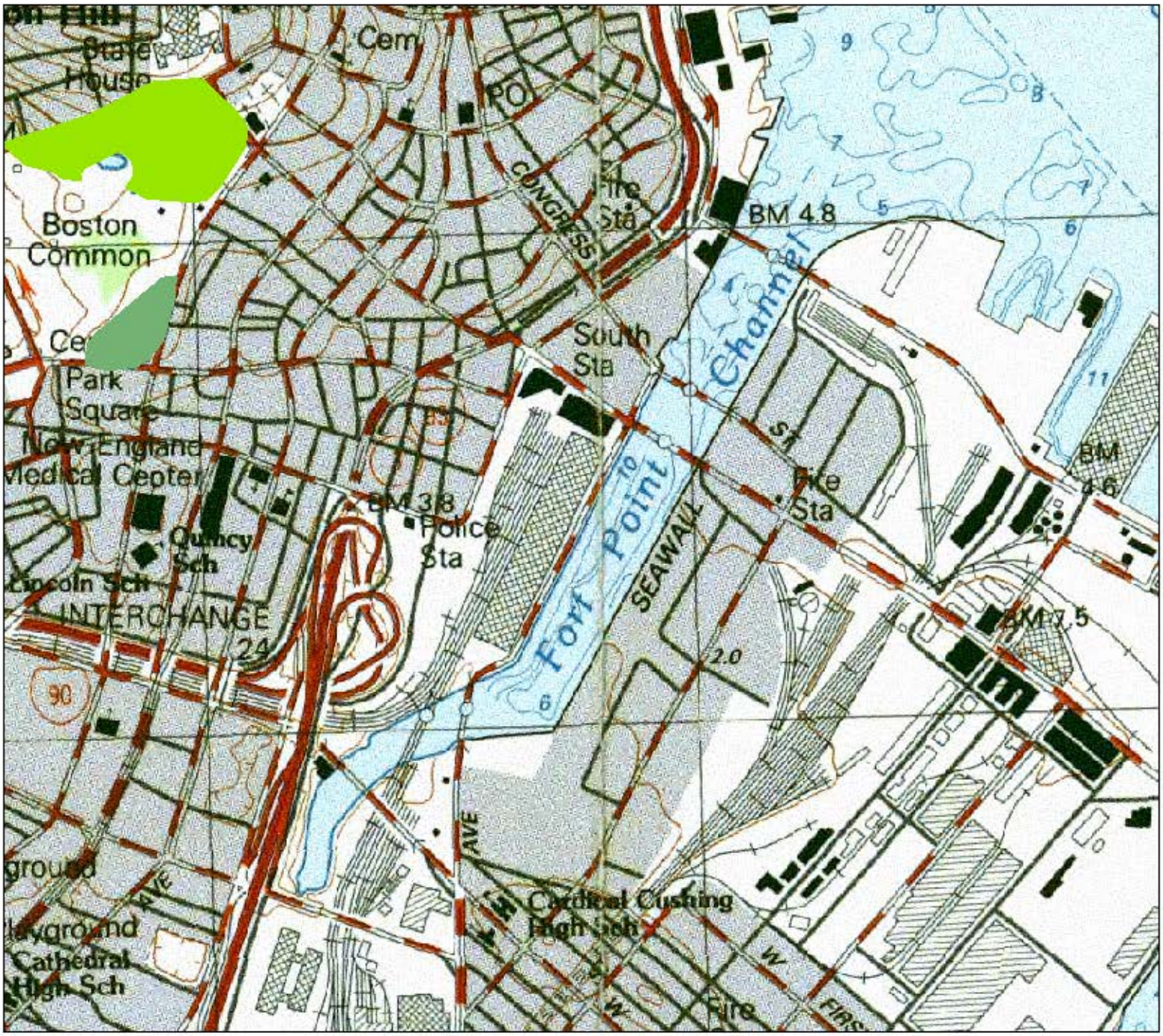
Date: 11/5/2012

Suffolk Co. Massachusetts

Field Office: WESTFORD SERVICE CENTER

Natural Resources Conservation Service

Assisted By: Julie Weiss



Legend

Norfolk-Suffolk (616) farmland classification

farmland classification

- All areas are prime farmland
- Farmland of statewide importance
- Farmland of unique importance

0 750 1,500 2,250 3,000 Feet

South Station Area
Highly-erodible Lands Map
Boston, MA

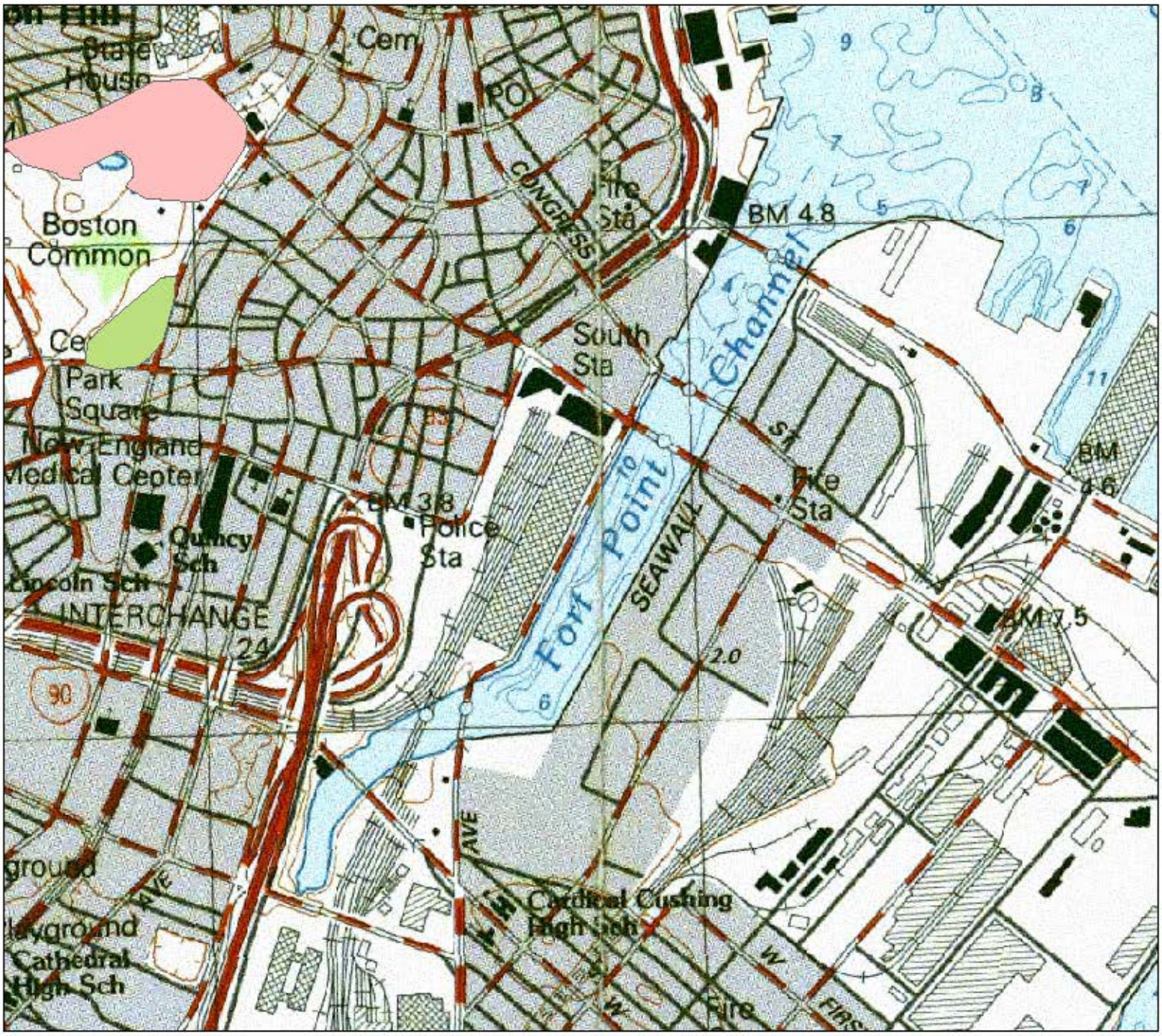
Date: 11/5/2012

Suffolk Co. Massachusetts

Field Office: WESTFORD SERVICE CENTER

Natural Resources Conservation Service

Assisted By: Julie Weiss



Legend

Norfolk-Suffolk (616) highly-erodible lands (HEL)

Erodibility

- HEL
- PHEL (potentially HEL)

0 750 1,500 2,250 3,000 Feet

South Station Area Soils Map
Boston, MA

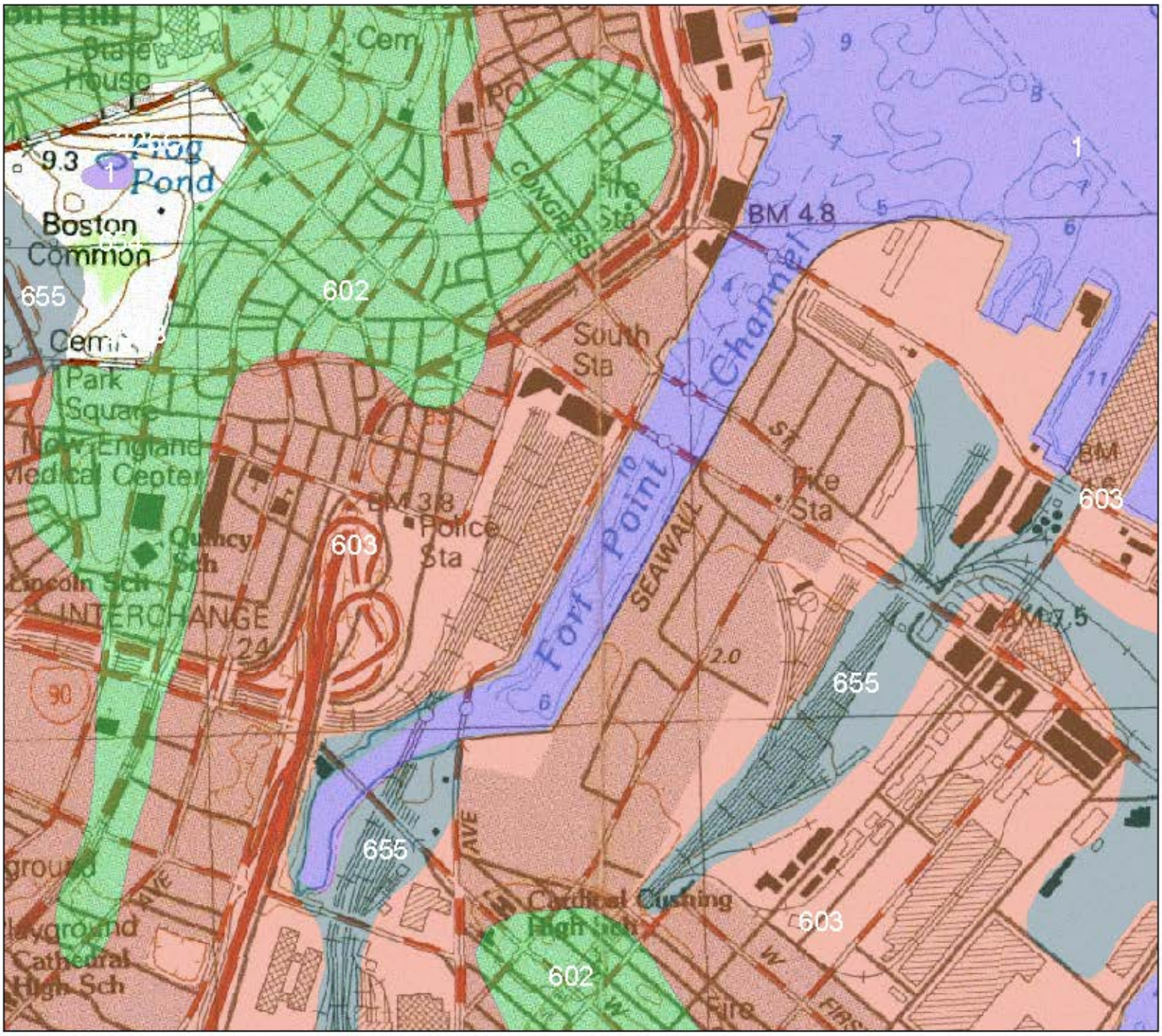
Date: 11/5/2012

Suffolk Co. Massachusetts

Field Office: WESTFORD SERVICE CENTER

Natural Resources Conservation Service

Assisted By: Julie Weiss



Legend

Norfolk-Suffolk Counties Soil Survey (ma616)

- 1, Water
- 602, Urban land, 0 to 15 percent slopes
- 603, Urban land, wet substratum, 0 to 3 percent slopes
- 655, Udorthents, wet substratum

0 750 1,500 2,250 3,000 Feet

NORFOLK AND SUFFOLK COUNTIES, MASSACHUSETTS
COMPREHENSIVE HYDRIC SOILS LIST (Continued)

Map Symbol Mapunit Name	Component(C)/ Inclusion(I)	Hydric	Local Landform	Hydric Soils Criteria				FSA Criteria and Information		Acres
				Hydric Criteria Code	Meets Saturation Criteria	Meets Flooding Criteria	Meets Ponding Criteria	Natural Condition of Soil	Needs On-Site	
Ud:										
UDORTHENTS, LOAMY-----										
	UDORTHENTS(C)	Unranked								4190
	UDORTHENTS ,SANDY (I)	Unranked								
	UDORTHENTS ,WET SUBSTR. (I)	Unranked								
	URBAN LAND(I)	Unranked								
Ue:										
UDORTHENTS, WET, SUBSTRATUM-----------										
	UDORTHENTS(C)	Unranked								6535
	IPSWICH (I)	Yes	Marsh	1,3	NO	NO	YES	Neither		
	URBAN LAND(I)	Unranked								
Uf:										
UDORTHENTS, REFUSE SUBSTRATUM----------										
	UDORTHENTS(C)	Unranked								900
	UDORTHENTS(I)	Unranked								
Ur:										
URBAN LAND, 0 to 15 PERCENT SLOPES--------										
	URBAN LAND(C)	Unranked								15290
	ROCK OUTCROPS (I)	Unranked								
Uw:										
URBAN LAND, WET SUBSTRATUM, 0 TO 3 PERCENT SLOPES--------										
	URBAN LAND(C)	Unranked								7665
	BEACHES (I)	Unranked								
	UDORTHENTS(I)	Unranked								

U.S. Department of Homeland Security

United States Coast Guard

Commander
First Coast Guard District

One South Street
Battery Park Building
New York, NY 10004-1466
Staff Symbol: dpb
Phone: (212) 344-8405
Fax: (212) 668-7967

16211/NV-854
Fort Point Channel

November 27, 2012

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT-Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116

Re: MassDOT South Station Expansion Project

Dear Ms. Fichter

This is in response to your letter dated 30 October 2012 inquiring whether the Coast Guard had any concerns regarding the referenced expansion project adjacent to Fort Point Channel. We have examined the waterway with regards to its status as a navigable water of the United States for purposes of Coast Guard bridge jurisdiction.

Our examination indicates that Fort Point Channel above the easterly side of the Dorchester Ave highway bridge is a non-navigable water of United States for purposes of general Coast Guard jurisdiction. Since this is the case, a Coast Guard bridge permit will not be required for the referenced project.

If you have any questions, please feel free to contact ENS Ydania Matos at the above telephone number.

Sincerely,

Gary Kassof
Bridge Program Manager
First Coast Guard District
By direction

Copy: FRA, ACOE NE

Appendix D – Section 106 Consultation Correspondence

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Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 24, 2012

Brona Simon
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125-3314

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Ms. Simon:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

- Expanding the South Station terminal facilities, including the addition of tracks and platforms, extension of some existing platforms, and construction of a new passenger concourse and other amenities.
- Demolition of the existing U.S. Postal Service distribution facility located on Dorchester Avenue, adjacent to South Station. Restoring Dorchester Avenue for public and station access, including the construction of an extension of the Boston Harborwalk.
- Providing for the possibility of future joint development at an expanded South Station.
- Creating a new MBTA vehicle layover facility for midday use.

The attached materials provide more background on the South Station Expansion project. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx. The attached map shows the South Station location.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

HNTB has retained Epsilon Associates and Public Archaeology Laboratory, Inc. to conduct a cultural resources survey. The project is considered an undertaking under Section 106 of the

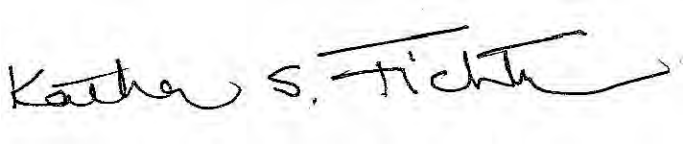
National Historical Preservation Act of 1966, as amended. On behalf of the Federal Railroad Administration as the lead federal agency, we are informing you of this survey. Epsilon and PAL will be conducting research, including the MHC and BLC's databases and other resources. In addition, you are invited to share with us any information you may have regarding cultural resources.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,



Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 24, 2012

Bettina Washington
Tribal Historic Preservation Officer
Wampanoag Tribe of Gay Head/Aquinnah
20 Black Brook Road
Aquinnah,MA 02535

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Ms. Washington:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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- Providing for the possibility of future joint development at an expanded South Station.
- Creating a new MBTA vehicle layover facility for midday use.

The attached materials provide more background on the South Station Expansion project. In addition, more information can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx. The attached map shows the South Station location.

We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

MassDOT has retained HNTB and cultural resource specialists Epsilon Associates and Public Archaeology Laboratory, Inc. to conduct a cultural resources survey. The project is considered

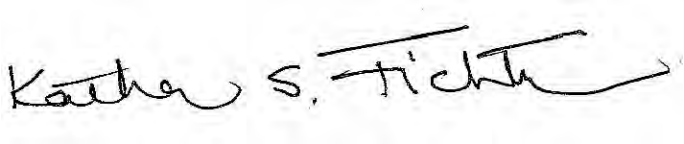
an undertaking under Section 106 of the National Historical Preservation Act of 1966, as amended. On behalf of the Federal Railroad Administration as the lead federal agency, we are informing you of this survey. Epsilon and PAL will be conducting research, including the MHC and BLC's databases and other resources. In addition, you are invited to share with us any information you may have regarding cultural resources.

If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,



Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 24, 2012

Ramona Peters
Tribal Historic Preservation Officer
Mashpee Wampanoag Tribe
766 Falmouth Road
Mataket Place Office A3
Mashpee, MA 02649

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Ms. Peters:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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We are writing to notify you of the project and to inquire about any existing issues of concern for your agency, so that they may be considered in the environmental inventory and project planning.

Ten Park Plaza, Suite 3170, Boston, MA 02116
Tel: 617-973-7000, TDD: 617-973-7306
www.mass.gov/massdot

MassDOT has retained HNTB and cultural resource specialists Epsilon Associates and Public Archaeology Laboratory, Inc. to conduct a cultural resources survey. The project is considered an undertaking under Section 106 of the National Historical Preservation Act of 1966, as amended. On behalf of the Federal Railroad Administration as the lead federal agency, we are informing you of this survey. Epsilon and PAL will be conducting research, including the MHC and BLC's databases and other resources. In addition, you are invited to share with us any information you may have regarding cultural resources.

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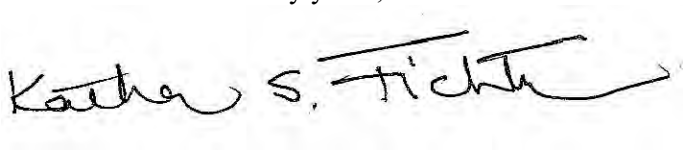
Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,



Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 24, 2012

John Peters
Executive Director
Massachusetts Commission on Indian Affairs
100 Cambridge Street, Suite 300
Boston, MA 02114

Re: MassDOT South Station Expansion Project - Planning, Design, & Environmental Review
Project Notification and Request for Participation

Dear Mr. Peters:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration, is undertaking a project to evaluate the expansion of Boston South Station. The project includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering.

The project is being undertaken to improve transportation capacity and on-time performance of the Northeast Corridor (NEC) and other intercity passenger and commuter rail services, as well as to expand and modernize passenger facilities and amenities at South Station. The project will include planning and preliminary engineering for the following elements:

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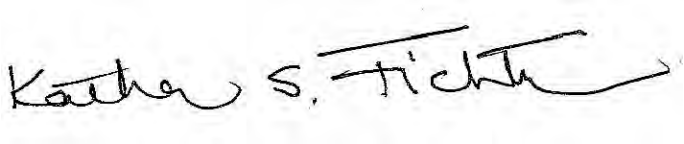
If you feel it would be appropriate to meet to further discuss the project, please contact me to arrange a meeting. If you should have any issues of concern or require additional information, please also contact me at the address below:

Katherine S. Fichter
South Station Expansion Project Manager
MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8852
katherine.fichter@state.ma.us

Your assistance in this matter is greatly appreciated. Please do not hesitate to contact me if you should have any questions or comments.

Sincerely yours,



Katherine S. Fichter
Project Manager
South Station Expansion

Enclosures: Informational Briefing
USGS Locus Map

H 5

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

April 9, 2013

Secretary Richard K. Sullivan, Jr.
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston MA 02114

ATTN: Holly Johnson, MEPA Unit

RE: South Station Expansion Project, Summer Street & Atlantic Avenue, Boston (Downtown), MA; MHC# RC.53253, **EEA# 15028**

Dear Secretary Sullivan:

The Massachusetts Historical Commission (MHC) is in receipt of an Environmental Notification Form (ENF) for the project referenced above. The staff of the Massachusetts Historical Commission (MHC) has reviewed the information submitted and has the following comments.

This project involves the proposed expansion of terminal facilities at South Station ("SSX project"), including acquisition and demolition of the US Postal Service mail distribution facility located adjacent to South Station at 25 Dorchester Avenue, the proposed extension of the Boston Harborwalk along a reopened Dorchester Avenue, provisions for the potential future public/private redevelopment adjacent to and over an expanded South Station, and a provision for rail vehicle layover areas for both intercity and commuter rail services. The ENF notes that the SSX project, regardless of the alternative ultimately chosen, will involve funding and permitting from the Federal Railroad Administration (FRA) and other federal agencies, including the U.S. Department of Transportation, and is therefore subject to review under Section 106 of the National Historic Preservation Act (36 CFR 800), Section 4(f) of the Department of Transportation Act (23 CFR 774) and NEPA.

The proposed project site includes the South Station Head House (BOS.1517) which is individually listed on the State and National Registers of Historic Places, and is adjacent to the Leather District Historic District (BOS.AP) and the Fort Point Channel Historic District (BOS.CX), which are also listed in the State and National Registers.

The No Build Alternative included in the ENF would involve no private development or expansion of South Station beyond the previously proposed South Station Air Rights project. The South Station Air

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(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

Rights project (EEA# 3205/9131; MHC# RC.9138) was previously reviewed by the MHC. After consultation with the MBTA regarding this separate project, the MHC and the MBTA entered into a Memorandum of Agreement (MOA) for that project. The MHC expects that any potential changes to the separate air rights project would be subject to consultation with the MHC under the terms of the existing MOA.

The ENF notes that MassDOT has not currently identified a preferred build-out alternative for the SSX project, but that MassDOT will include an alternatives analysis in the Draft EIR. The MHC looks forward to receipt of the DEIR and to the FRA's identification of an Area of Potential Effects (APE), identification and evaluation of historic resources within the APE, and finding of effects for the project alternatives.

The Draft EIR and the FRA's identification, evaluation, and findings of effect should take into account the proposed demolition of the USPS General Mail Facility/South Postal Annex, as well as the potential physical effects on the South Station Head House through vibration and construction methods. The Draft EIR and FRA's Section 106 review should also take into account the potential visual, atmospheric, and physical effects (through shadow and wind) that the proposed new construction would have on surrounding historic properties (especially the South Station Head House) as part of the Joint/Private Development Minimum Build alternative and the Joint Private Development Maximum Build alternative. Studies should also be performed for the potential effects of the proposed Layover Facilities alternatives on any nearby historic properties.

The MHC expects that continued consultation with MassDOT, the MBTA, and the FRA will include MassDOT's preparation of a reconnaissance level architectural resources survey of the entire project site and architectural APE, as well as a Phase I Archaeological Reconnaissance Survey, as described in Attachment A, page 11 of the ENF. The MHC looks forward to the result of these surveys and continued consultation on this project.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800), M.G.L. Chapter 9, Section 26-27C, (950 CMR 71.00) and MEPA (301 CMR 11). Please do not hesitate to contact Brandee Loughlin of my staff if you have any questions.

Sincerely,

Brona Simon

Brona Simon
State Historic Preservation Officer
Executive Director
Massachusetts Historical Commission

xc: Michelle Fishburne, Federal Railroad Administration
Mary Beth Mello, Federal Transit Adminstration
Katherine Fichter, MassDOT
Andrew Brennan, MBTA
Boston Landmarks Commission
Boston Preservation Alliance

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

JUL 3 2014

Mr. William F. Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission
The Massachusetts Archives Building
220 Morrissey Boulevard
Boston, Massachusetts 02125

ATTN: Ms. Brona Simon, State Historic Preservation Officer
Executive Director

SUBJ: South Station Expansion Project, Boston, MA

Dear Secretary Galvin:

Please find enclosed one copy each of two draft reports prepared for the Federal Railroad Administration (FRA) in support of environmental evaluations being conducted for the South Station Expansion (SSX) project. In cooperation with the Massachusetts Department of Transportation (MassDOT), the Massachusetts Bay Transportation Authority (MBTA) and the National Railroad Passenger Corporation (Amtrak), FRA is pursuing the expansion of Boston's South Station to support existing Northeast Corridor and commuter rail services and to provide for future Amtrak and MBTA service expansions. The current track capacity, layout, and operations of South Station limit the ability to achieve projected future expanded services. In addition to expanding the South Station terminal facilities, the SSX project will identify a solution to address existing and future intercity and commuter rail service layover needs. The SSX project consists of four sites: the South Station site, including South Station Rail/Transit Terminal and South Station Bus Terminal, the United States Postal Service's General Mail Facility/South Postal Annex, and a portion of Dorchester Avenue fronting the site and running parallel to the Fort Point Channel; and three layover facility sites. The layover facility sites under consideration include: Widett Circle, located adjacent to the MBTA Fairmount Line in South Boston approximately 1-track mile south of South Station; Beacon Park Yard, located on the MBTA Framingham/Worcester Line in Allston approximately 4-track-miles west of South Station; and Readville-Yard 2, located on the MBTA Fairmount Line in Hyde Park approximately 9-track-miles south of South Station.

The Historic Architectural Resources Existing Conditions Technical Report (Draft, May 2014) was prepared by Epsilon Associates, Inc. The report establishes and documents the Area of Potential Effects (APE), which is consistent with the recommendations of the Boston Landmarks Commission for the South Station site. The survey of aboveground historic resources was conducted in accordance with the standards and guidelines established by the Massachusetts Historic Commission (MHC) in *Historic Properties Survey Manual: Guidelines for the Identification of Historic and Archaeological Resources in Massachusetts* (1992) and *Survey Technical Bulletin #1* (1993), and in the Secretary of the Interior's *Standards and Guidelines for Identification* (1983) and *National Register Bulletin 24, Guidelines for Local Surveys: A Basis for Preservation Planning* (1977, revised 1985). The intent of the survey of aboveground historic resources is to locate and identify all aboveground properties, including districts, buildings, structures, objects, and sites, within the project's APE that are listed or may be eligible for listing in the National Register of Historic Places. In addition to reviewing existing

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

August 13, 2014

Michelle W. Fishburne
Environmental Protection Specialist
Office of Railroad Policy and Development
USDOT Federal Railroad Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: South Station Expansion Project, Summer Street & Atlantic Avenue, Boston (Downtown), MA;
MHC # RC.53253. EEA# 15028.

Dear Ms. Fishburne:

The Massachusetts Historical Commission (MHC), office of the Massachusetts State Historic Preservation Officer, has reviewed the technical reports *South Station Expansion Project Historic Architectural Resources Existing Conditions Technical Report Task 13-May 2014* and *South Station Expansion Project Phase I Archaeological Reconnaissance Survey Technical Report Task 13-Jaunary 2014*, prepared by Epsilon, Inc., and the PAL on behalf of MassDOT and MBTA, received July 14, 2014 for the project referenced above.

The MHC concurs with the identification and evaluation findings that are included in these reports and offers the following comments.

The MHC looks forward to receipt of additional information, including the Draft Environmental Impact Report (DEIR) that should contain scaled existing and proposed conditions project plans for the preferred alternative, and to the Federal Railroad Administration's (FRA) determinations of effects for the project alternatives.

The historic architectural report defines three project areas of potential effect for above-ground historic resources that include a one-quarter mile from the boundaries of the new construction developable parcels, 125 feet or one assessor's parcel from site boundaries for minor track work, and 250 feet or to majoring intervening structures for alternative layover sites (Section 1.3.2, pp. 4, 5). The areas of potential effect for archaeological resources include all project elements that will cause ground disturbances, with refinement of the area of potential effect expected to be conducted by the PAL and MassDOT as project planning proceeds (Section 1.3, pg. 3).

The MHC recommends that the FRA take into account the terms of the Memorandum of Agreement (MOA) for the South Station Air Rights project (EEA# 3205/9131; MHC# RC.9138) in evaluating preferred project alternatives in the vicinity of the South Station Head House. The MHC expects that any potential changes to the separate air rights project would be subject to consultation with the MHC under the terms of the existing MOA for that project.

Potential visual, atmospheric, and physical effects, through the introduction of new shadows and wind, construction methods and demolition of the USPS General Mail Facility/South Postal Annex, that the proposed new construction would have on surrounding historic properties, especially the South Station

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

Head House, should be incorporated into the alternatives analysis based on the preliminary area of potential effect for historic architectural resources presented in the existing conditions technical report.

The results of the reconnaissance archaeological survey indicate that the majority of the project parcels as currently proposed possess low archaeological sensitivity due to extensive previous disturbance associated with new land creation and modification in the 19th and 20th centuries as part of railroad and other industrial land uses. The MHC recommends no further archaeological survey for the project parcels as currently proposed.

The MHC has requested under separate cover that two bound copies of the final Phase I reconnaissance archaeological survey report, and a CD-ROM with the technical report abstract and bibliographic information, be submitted to the MHC by the PAL.

The MHC looks forward to continued consultation with the FRA, MassDOT, and the MBTA, and as project planning proceeds.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800), M.G.L. Chapter 9, Section 26-27C, (950 CMR 71.00) and MEPA (301 CMR 11). Please contact Jonathan K. Patton of my staff if you have any questions.

Sincerely,

Brona Simon

Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc: Mary Beth Mello, Federal Transit Administration
Matthew Ciborowski, MassDOT
Andrew Brennan, MBTA
Secretary Maeve Vallely Bartlett, EEA, ATTN: Holly Johnson, MEPA Unit
Boston Landmarks Commission
Boston Preservation Alliance
Joe Bagley, Boston City Archaeologist
Deborah C. Cox, PAL, Attn: Suzanne Cherau

The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

December 23, 2014

Michelle W. Fishburne
Environmental Protection Specialist
Office of Railroad Policy and Development
USDOT Federal Railroad Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: South Station Expansion Project, Summer Street & Atlantic Avenue, Boston (Downtown), MA; MHC # RC.53253. EEA# 15028.

Dear Ms. Fishburne:

The Massachusetts Historical Commission (MHC), office of the Massachusetts State Historic Preservation Officer, has reviewed the Draft Environmental Impact Report (DEIR), received November 5, 2014 for the project referenced above.

The MHC looks forward to receipt of additional information, including the Final Environmental Impact Report (FEIR) that should contain scaled existing and proposed conditions project plans for the preferred alternative, and to the Federal Railroad Administration's (FRA) determinations of effects for the preferred project alternative in compliance with Section 106 of the National Historic Preservation Act (36 CFR 800).

The DEIR indicates that the proposed project alternatives will be coordinated with other contiguous project environmental reviews, including the South Station Air Rights project (EEA# 3205/9131; MHC# RC.9138) and the I-90 Allston Interchange Project (MHC# RC. 57197), for incorporation into evaluation of preferred project alternatives in the vicinity of the South Station Head House as noted in Chapter 1 and the Beacon Park Yard layover area. Proposed conceptual designs for new construction and/or modification to the South Station Head House should be submitted to the MHC for review and comment as they are developed.

The DEIR (Section 4.12) includes evaluations of potential visual, atmospheric, and physical effects, through the introduction of new shadows and wind, construction methods and demolition of the USPS General Mail Facility/South Postal Annex on historic properties, including the South Station Head House (BOS.1517), Fort Point Channel Historic District (BOS.CX), 245 Summer Street (BOS.2050), and the Leather District (BOS.AP). It is the opinion of MHC staff that the USPS General Mail Facility/South Postal Annex (MHC # BOS. 1694) does not meet the criteria of eligibility for listing in the National Register of Historic Places (36 CFR 60) pursuant to the 1983 evaluation completed by the USPS. The FEIR should include a matrix of effects for National Register-Listed or National Register-eligible historic architectural resources within the preferred alternative area of potential effect.

The MHC looks forward to continued consultation with the FRA, MassDOT, and the MBTA, and as project planning proceeds.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800), M.G.L. Chapter 9, Sections 26-27C (950 CMR 71.00) and MEPA (301 CMR 11). Please contact Jonathan K. Patton or Elizabeth Sherva of my staff if you have any questions.

Sincerely,

Brona Simon

Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc: Mary Beth Mello, Federal Transit Administration
Matthew Ciborowski, MassDOT
Andrew Brennan, MBTA
Secretary Maeve Vallely Bartlett, EEA, ATTN: Holly Johnson, MEPA Unit
Boston Landmarks Commission
Boston Preservation Alliance
Joe Bagley, Boston City Archaeologist
Deborah C. Cox, PAL, Attn: Suzanne Cherau

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

July 28, 2016

Secretary Matthew Beaton
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

ATTN: Holly Johnson – MEPA Unit

RE: South Station Expansion Project, Summer Street & Atlantic Avenue, Boston (Downtown), MA; MHC# RC.53253 EEA# 15028.

Dear Secretary Beaton:

The Massachusetts Historical Commission (MHC), office of the Massachusetts State Historic Preservation Officer, has reviewed the Final Environmental Impact Report (FEIR), received July 5, 2016 for the project referenced above.

The MHC understands that the project has changed since the publication of the Draft Environmental Impact Report (DEIR). Alternative -1 Transportation Improvements Only has been chosen as the preferred alternative. This preferred alternative does not include a joint development with the air-rights development at South Station. The preferred alternative will further consider Widett Circle and Readville – Yard 2 for potential sites for mid-day train layover locations. Use of the Beacon Park Yard in Allston will no longer be considered as a layover facility. Additionally, the proposed project now includes a proposal to raise a portion of the Fort Point Channel seawall in response to projected sea levels.

The FEIR provided conceptual plans illustrating the proposed location of the new headhouse, platform, and elevated concourse. The new headhouse is proposed to be two-stories with an elevated concourse connecting to the historic headhouse. The FEIR does not include proposed conceptual designs or architectural drawings of the proposed new construction and modifications to the historic South Station Headhouse. Conceptual designs and architectural drawings of the proposed new construction and modifications to the historic South Station Headhouse should be submitted to MHC as soon as they are available at 30% design.

The MHC requests submittal of engineering drawings and detailed project plans for the proposed raising of a portion of the Fort Point Channel seawall. The historic seawalls are listed in the National Register of Historic Places as contributing resources to the Fort Point Channel Historic District.

The MHC looks forward to receipt of additional information cited above and to the Federal Railroad Administration's (FRA) determinations of effects for the preferred project alternative in compliance with Section 106 of the National Historic Preservation Act (36 CFR 800).

The MHC looks forward to continued consultation with the FRA, MassDOT, and the MBTA, and as project planning proceeds.

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These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800), M.G.L. Chapter 9, Sections 26-27C (950 CMR 71.00) and MEPA (301 CMR 11). Please contact Jonathan K. Patton or Elizabeth Sherva of my staff if you have any questions.

Sincerely,

Brona Simon

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State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc: Mary Beth Mello, Federal Transit Administration
Michelle Fishburne, Federal Railroad Administration
Matthew Ciborowski, MassDOT
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Boston Preservation Alliance
Joe Bagley, Boston City Archaeologist
Deborah C. Cox, PAL, Attn: Suzanne Cherau

HNTB Corporation
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Letter of Transmittal

HNTB Job # 55772
VIA Essek Petrie
Date: 8/4/2016

To: Brona Simon
State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

Regarding: South Station Expansion project
Continuation of Section 106 Consultation

We are forwarding to you:

____	Estimates	____	Plans	____	Prints
X	Reports	____	Shop Drawings	____	Samples
____	Change Order	____	Disk	____	Copy of Letter
____	Book	____	Other		

# of Copies	Drawing #	Last Dated	Code	Description
1		3/2016		SSX Historical Architectural Resources Tech Report
1		3/15/16		Raising Dorchester Avenue Seawall Information Package
1		8/4/16		Letter from FRA

These are transmitted:

X For approval	____ Resubmit	___ copies for review	____ No exceptions taken (NE)
____ For your use	____ Submit	___ copies for distribution	____ Make corrections noted (MCN)
X As requested	____ Return	___ corrected prints	____ Amend and resubmit (AR)
X For review and comment	____		

Please note:

By: Essek Petrie

Copy to: Steve Woelfel, MassDOT

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

August 4, 2016

Brona Simon
State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

Re: South Station Expansion Project, Boston, Massachusetts
Continuation of Section 106 Consultation
Conditional Finding of No Adverse Effect

Dear Ms. Simon:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station in Boston. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act (NEPA/MEPA) reviews, and preliminary engineering. The purpose of the SSX Project is to expand South Station terminal capacity and related layover capacity in order to meet current and future high-speed, intercity, and commuter rail service needs. The expansion of South Station would enable much-needed growth in passenger rail along the Northeast Corridor and within the Commonwealth of Massachusetts. The SSX Project would also facilitate improvements in corridor and regional mobility, passenger experience and comfort, economic development, and quality of life. The purpose of this letter is to continue consultation with your office pursuant to Section 106 of the National Historic Preservation Act, 54 U.S.C. § 306108, and its implementing regulations, Protection of Historic Properties (36 CFR part 800) ("Section 106") for the SSX Project.

In July 2014, FRA submitted to your office two draft technical reports for the SSX Project, one for historic architectural resources and one for archaeological resources:

- *Historical Architectural Resources Existing Conditions Technical Report Task 13,* (dated May 2014.)

- *Phase I Archaeological Reconnaissance Survey Technical Report Task 13* (dated January 2014).

A copy of FRA's July 3, 2014 transmittal of these two documents is included in Attachment D of the enclosed revised *Historic Architectural Resources Technical Report* (March 2016).

The *Historic Architectural Resources Technical Report* (dated May 2014) established and documented the SSX Project's Area of Potential Effects (APE). The *Phase I Archaeological Reconnaissance Survey Technical Report* (dated January 2014) provided an archaeological sensitivity assessment for the project, and was conducted under State Archaeologist's Permit Number 3397 issued on June 18, 2013. MHC provided comments to FRA, in a letter dated August 13, 2014, which concurred with the identification and evaluation findings presented in these reports and offered specific comments (copy of letter included

in Attachment D of the enclosed report). In that letter, MHC concurred with the results of the archaeological reconnaissance survey that the majority of the project parcels possess low archaeological sensitivity and recommended no further archaeological survey for the project parcels.

Project Update

The SSX Project was described in the *Draft Environmental Impact Report (DEIR)*, submitted to MHC in October 2014. The DEIR included the *Historic Architectural Resources Technical Report* (dated May 2014) and *Phase I Archaeological Reconnaissance Survey Technical Report Task 13* (dated October 2014). Since that time, MassDOT has selected its preferred Build Alternative. The enclosed updated *Historic Architectural Resources Technical Report* (dated March 2016) provides an update on the current proposed project. The March 2016 report removed references to other build alternatives, which are no longer being considered. The updated report discusses proposed improvements to a portion of the Fort Point Channel east seawall, a contributing structure to the Fort Point Channel Historic District. In addition, the updated report includes FRA's determination of effects to historic properties. The *Phase 1 Archaeological Reconnaissance Survey Technical Report Task 13* (dated October 2014), included in the DEIR, provides an archaeological assessment for the project components selected for the Build Alternative; therefore, no additional archaeological assessment was conducted for the currently proposed SSX Project.

MassDOT recently submitted a Final Environmental Impact Report (FEIR) to comply with MEPA, and FRA and MassDOT are concurrently preparing a separate Environmental Assessment (EA) to comply with NEPA. FRA, in accordance with Section 106, is providing your office with information on the SSX Project as currently proposed. This information includes a description of the undertaking, identification of consulting parties, a definition of the APE, identification of historic properties, and a determination of effects.

To date, FRA in coordination with MassDOT has completed the following steps in the Section 106 process for the SSX Project:

Establishment of an Undertaking

FRA determined that the proposed SSX Project is an undertaking, in compliance with 36 CFR 800.3(a) and as defined in 36 CFR 800.16(y), and determined that the project has the potential to cause effects on historic properties. The MassDOT letter on behalf of FRA (dated October 24, 2012) to your office, tribal organizations, and the Massachusetts Commission on Indian Affairs (MCIA) initiated Section 106 consultation, identified the project as an undertaking under Section 106, and invited these parties to participate in consultation. Copies of the MassDOT letters are included in Attachment D of the enclosed *Historic Architectural Resources Technical Report* (dated March 2016).

Identification of Consulting Parties

FRA identified MHC as the appropriate SHPO for the SSX Project/undertaking.

FRA identified the Boston Landmarks Commission (BLC) as an appropriate representative of the local government.

FRA identified the Wampanoag Tribe of Gay Head (Aquinnah) and the Mashpee Wampanoag Tribe as tribal organizations to be consulted regarding the proposed project.

The MCIA was also identified as an appropriate party to be consulted regarding the proposed SSX Project.

As the Project has advanced and because of the growing interest in passenger rail projects and planning efforts along the Northeast Corridor, FRA has identified the following potential additional consulting parties who may be interested in the SSX Project and intends to invite them to participate in the Section 106 process:

- Fort Point Channel Landmark District Commission
- National Railroad Passenger Corporation (Amtrak)
- Metropolitan Area Planning Council
- Boston Preservation Alliance
- Preservation Massachusetts
- Boston Harbor Now
- Save the Harbor Save the Bay
- WalkBoston

FRA requests feedback from your office regarding whether any additional parties your office may wish to identify should be invited to participate in the Section 106 process for the SSX Project.

Identification of the Area of Potential Effects

FRA in coordination with MassDOT established three APEs for historic architectural resources:

- South Station project area surrounding South Station new construction;
- Areas where only minor rail improvements associated with the South Station Terminal are proposed; and
- Two layover facility sites.

The APEs were described in the *Historic Architectural Resources Technical Report* (dated May 2014) and the *Phase I Archaeological Reconnaissance Survey Technical Report* (dated October 2014). A revised historic architectural APE is described in the enclosed *Historic Architectural Resources Technical Report* (dated March 2016). The APE for archaeological resources, established in 2014, has not been revised and consists of the direct impact for construction activities proposed within the project boundaries of the 49-acre site located in and around existing South Station and the two layover facility sites.

Identification of Historic Properties

MassDOT and its consultants, on behalf of FRA, identified historic properties within and in the vicinity of the APE, which included research and field survey. The *Massachusetts Cultural Resource Information System* (MACRIS) online database, the National and State Registers of Historic Places, and the *Inventory of the Historic and Archaeological Assets of the Commonwealth* (the "Inventory") maintained by MHC were reviewed.

Background research and subsequent field survey updated in 2016 for historic architectural resources concluded that the APE, comprised of three sites (South Station and two layover facility sites), encompasses:

- Six properties listed in the National and/or State Registers;
- 12 properties included in the Inventory; and
- One property that was at least 50 years old and not previously surveyed.

Of the 12 inventoried properties, six are recommended as eligible for inclusion in the National Register of Historic Places (NRHP), per the National Register eligibility criteria established by the National Park Service, including one property less than 50 years of age that appears to meet the threshold of exceptional significance of the National Register Criterion Consideration G. Six of the inventoried properties are less than 50 years of age and/or were previously recommended as not meeting National Register eligibility criteria. One property (Gillette) was identified as being at least 50 years old and not previously surveyed, and is also recommended as eligible for inclusion in the NRHP. The results of the revised survey to identify and evaluate historic properties are presented in the enclosed *Historic Architectural Resources Technical Report* (dated March 2016).

Background research and field survey for archaeological resources undertaken in 2014 concluded that the archaeological resources APE (South Station and two layover facility sites) does not contain any archaeological sites or sensitivity areas where potentially significant below ground resources may be present.

Determination of Effects

FRA and MassDOT applied the Section 106 and MHC effect criteria (36 CFR 800.5 and 950 CMR 71.07(2)(b)) to determine if the project would have "no effect," "no adverse effect," or an "adverse effect" on historic properties located within the APE.

FRA and MassDOT recognize that multiple historic architectural properties are located within the APE. FRA and MassDOT have further determined that the SSX project would have "no effect" on a majority of these historic properties. Impacts of the SSX Project to historic properties in the APE would be limited to potential construction noise impacts to the South Station headhouse and potential operational noise impacts to the Fort Point Channel Historic District. A Construction Management Plan/Noise Control Plan would be implemented to assure construction noise would be in compliance with Federal Transit Administration and City of Boston construction noise limits. A moderate noise impact is expected to occur to sensitive receptors within the Fort Point Channel Historic District due to the removal of the USPS facility along Dorchester Avenue. To eliminate or minimize adverse noise impacts to the Fort Point Channel Historic District, a noise barrier would be installed along the length of the easternmost track to provide mitigation for the Fort Point Channel Historic District. FRA and MassDOT believe these mitigation measures will effectively eliminate or minimize any potential adverse construction or operation-period noise impacts.

The Fort Point Channel east and west seawalls are contributing structures to the Fort Point Channel Historic District. The SSX Project includes raising an approximately 700-foot section of the east seawall along Dorchester Avenue by 1.5 feet to match the elevation of the adjacent east seawall to the north and south. MassDOT's proposal to raise the seawall is in response to recent projections of sea level rise of nearly two feet by the year 2050 and is necessary to help mitigate potential future flooding on the South Station site. These improvements to the seawall are further discussed in the enclosed *Historic Architectural Resources Technical Report* (dated March 2016). The seawall improvements would not introduce any elements that are out of character with the Fort Point Channel Historic District and have been designed to be consistent with the Secretary of the Interior's Standards for Rehabilitation. Under

Section 4(f) of the U.S. Department of Transportation Act of 1966, FRA proposes that the seawall improvements would have a *de minimis* impact on this 4(f)-protected historic property. Replacing the deteriorated railing is considered to enhance preservation of the resource and raising the elevation of the seawall represents mitigation to address sea level rise.

The project, as designed, would not have any adverse visual impacts on the South Station headhouse or surrounding historic properties. Specific to historic preservation, planning and design principles include:

- Respecting South Station's rich history, its prominent location, and its role as the transportation hub for the region;
- Creating a work of civil architecture that complements the historic and architectural significance of the 1899 headhouse; and
- Recognizing and protecting the historic integrity of the existing South Station headhouse and its value as a public space.

On behalf of FRA, MassDOT will submit project plans to MHC at the 30% and 60% design phases for review, to confirm the design is consistent with the established design principles and historic preservation standards for new construction.

Effects of the SSX Project on historic properties located within the APE are summarized in Table 3 of the enclosed updated March 2016 *Historic Architectural Resources Technical Report* and excerpted as Table 1 below. FRA has determined that the SSX Project would have **No Adverse Effect** on historic properties and either no use or *de minimis* impacts under Section 4(f), provided conditions described in the enclosed technical report are implemented to avoid adverse project impacts.

Table 1 SSX Project Determination of Effects

Name	Determination of Effect	Conditions
Properties listed in the National and/or State Registers of Historic Places		
Leather District	No Effect	NA
Russia Wharf Buildings	No Effect	NA
Commercial Palace Historic District	No Effect	NA
Fort Point Channel Historic District	No Adverse Effect	- Construction Management Plan/Noise Management Plan - South Station Noise Barrier - Fort Point Channel West Seawall Repairs
South Station Headhouse	No Adverse Effect	- Construction Management Plan/Noise Management Plan - Historic Preservation Design Principles - MHC Design Review
Fort Point Channel Landmark District	No Adverse Effect	- Construction Management Plan/Noise Management Plan - South Station Noise Barrier

Properties included in the Inventory of Historic and Archaeological Assets of the Commonwealth		
Chester Guild, Hide and Leather Machine Company	No Effect	NA
Chinatown District	No Effect	NA
Federal Reserve Bank of Boston	No Effect	NA
Kneeland Street Steam Heating Plant	No Effect	NA
South End Industrial Area	No Effect	NA
Weld Building	No Effect	NA
USPS General Mail Facility/South Postal Annex	No Historic Properties Affected – Recommended Not National Register Eligible	NA
Properties Not Previously Surveyed		
Gillette	No Effect	NA

Consultation and Comments to Date

The Wampanoag Tribe of Gay Head (Aquinnah), Mashpee Wampanoag Tribe, and the MCIA were provided project information by MassDOT on behalf of FRA in letters dated October 24, 2012. BLC was provided a copy of the DEIR for review and comment. To date, FRA has received no comments from any of these consulting parties. A follow-up telephone call from MassDOT to the BLC confirmed that the BLC has "no comment" on the proposed project (telephone communication on January 8, 2016). MassDOT, on behalf of FRA, will share a summary of the aforementioned effects determinations with these consulting parties, as well as any newly identified parties who may wish to participate in the Section 106 process, for review and comment. Upon concurrence from MHC, the final *Historic Architectural Resources Technical Report* will be made available to the consulting parties and the public via posting on the SSX Project website at https://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

In accordance with 36 CFR 800.5(c), FRA is notifying MHC of its proposed finding of a conditional No Adverse Effect and seeking written concurrence from your office with this finding. FRA is also seeking MHC's input regarding extending a consulting parties invitation to additional parties. If you have questions about the SSX Project or require additional information, please contact me at (202) 366-0340 or laura.shick@dot.gov. FRA looks forward to a response within 30 days of MHC's receipt of this letter.

Sincerely,

Laura Shick
Federal Preservation Officer
Environmental & Corridor Planning Division
Office of Railroad Policy and Development

Enclosures
cc: w/o enclosures: Stephen Woelfel, MassDOT

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

August 30, 2016

Laura Shick
Federal Preservation Officer
Federal Railroad Administration
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: South Station Expansion Project, Summer Street & Atlantic Avenue, Boston (Downtown), MA; MHC# RC.53253, **EEA# 15028**

Dear Ms. Shick:

Staff of the Massachusetts Historical Commission (MHC) have reviewed the information that was submitted, received at this office on August 5, 2016, for the project referenced above. The staff of the MHC have the following comments.

The proposed project Build Alternative includes the addition of seven new tracks and four platforms for rail service and the construction of a new two-story headhouse with an elevated concourse connection to the historic headhouse. Additionally, the proposed project now includes a proposal to raise a portion of the Fort Point Channel seawall in response to projected sea levels. Both Widett Circle and Readville – Yard 2 continue to be considered for the location of the mid-day train layover location. The current Build Alternative does not include a joint development with the air rights development at South Station.

MHC requests that the Friends of Fort Point Channel be invited to participate in the Section 106 process as a consulting party.

The MHC cannot concur with the finding of conditional no adverse effect at this time. The information submitted to MHC is incomplete. The MHC requests that the following information be submitted in order to evaluate the potential effects of the work proposed:

- Clarification on the granite proposed for Seawall modifications. MHC received the South Station Expansion Project Memorandum for Raising Dorchester Avenue Seawall Information Package as part of the submission received at this office on August 5, 2016. While the submission lists Granite blocks in the materials list, it is unclear how this material will be obtained. The submission states, "...either recovered from near the seawall/channel or acquired from local quarries in Massachusetts or New England (See attached original list from the American Society of Civil Engineers, June 1900 paper)." The American Society of Civil Engineers list was not included in the submission. Will the Fort Point Channel be dredged to obtain granite? How will the project proponent assure that the granite will be of the same color, texture, and mineral makeup as the existing Seawall granite?

- Clarification on the proposed closure of the South Station Post Office. The project will displace the South Station United States Post Office operations. Has a new location been chosen for the

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www.sec.state.ma.us/mhc

South Station United States Post Office operations? If so, where is the proposed location and will it utilize or impact any historic buildings?

- Clarification on the Visual and Design Considerations for the proposed new headhouse to be connected to the historic headhouse. The information that was submitted states that the design will be "consistent with the established design principles and historic preservation standards for new construction." Please clarify which historic preservation standards are being referred to, such as the Secretary of the Interior's Standards for Rehabilitation.

Additionally, the MHC requests that the actual conditions to a potential conditional no adverse effect finding be detailed. Table 1 SSX Project Determination of Effects, abbreviates the conditions and does not adequately detail the conditions.

MHC looks forward to receiving the requested information and continued consultation with the FRA, MassDOT, and the MBTA, and as project planning proceeds.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800), M.G.L. Chapter 9, Sections 26-27C (950 CMR 71.00) and MEPA (301 CMR 11). Please contact Jonathan K. Patton or Elizabeth Sherva of my staff if you have any questions.

Sincerely,

Brona Simon

Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc: Mary Beth Mello, Federal Transit Administration
Michelle Fishburne, Federal Railroad Administration
Matthew Ciborowski, MassDOT
Andrew Brennan, MBTA
Secretary Matthew Beaton, EEA/MEPA Unit
Boston Landmarks Commission
Boston Preservation Alliance
Joe Bagley, Boston City Archaeologist
Deborah C. Cox, PAL, Attn: Suzanne Cherau

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

10/19/16

Stephen Gardner
Executive Vice President, Chief of NEC Business Development
Amtrak
60 Massachusetts Avenue, NE
Washington, DC 20002

Re: South Station Expansion Project
Section 106 Consulting Party Invitation

Dear Mr. Gardner,

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, preliminary engineering, and evaluation of environmental impacts pursuant to the National Environmental Policy Act (NEPA) and the Massachusetts Environmental Policy Act (MEPA). In accordance with MEPA, MassDOT prepared and filed a Draft Environmental Impact Report (DEIR) in October 2014 and the Final Environmental Impact Report (FEIR) in June 2016. MassDOT and FRA are currently developing an Environmental Assessment in accordance with NEPA, which is anticipated to be completed in 2017.

Concurrently with the NEPA process, FRA and MassDOT are considering potential impacts of the SSX Project on historic properties, as required by Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations at 36 CFR Part 800. To date, FRA and MassDOT have consulted with the Massachusetts Historical Commission (MHC), which serves as the State Historic Preservation Office, the Wampanoag Tribe of Gay Head (Aquinnah), the Mashpee Wampanoag Tribe, the Massachusetts Commission on Indian Affairs, and the Boston Landmarks Commission. As the SSX Project planning has advanced and because of the growing interest in passenger rail projects and planning efforts along the Northeast Corridor, FRA has identified your organization as a potential additional consulting party who may be interested in the project and its potential effects on historic properties. Therefore, by way of this letter, FRA formally invites your organization to be a consulting party in the Section 106 process for the SSX Project.

The SSX Project is being undertaken to expand South Station terminal capacity and related layover capacity in order to meet current and anticipated future high-speed, intercity, and commuter rail service needs. The SSX Project will include the following elements:

- Acquiring and demolishing the US Postal Service property on Dorchester Avenue;
- Reopening Dorchester Avenue to the general public and extending the Harborwalk;
- Expanding the South Station Terminal by adding four platforms and seven new tracks; modifying the rail connections to reduce conflicts; and constructing 385,000 square feet of new headhouse and a major station entrance along Dorchester Avenue; and
- Constructing rail layover facilities for storing trains at midday at Widett Circle and Readville-Yard 2. (MassDOT is analyzing a third layover facility at Beacon Park Yard under MassDOT's I-90 Allston Interchange Improvement project.)

Information and background on the SSX Project is available at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

Determination of Effects to Historic Properties

FRA and MassDOT applied the Section 106 and MHC effect criteria (36 CFR 800.5 and 950 CMR 71.07(2)(b)) to determine if the project would have "no effect," "no adverse effect," or an "adverse effect" on historic properties located within the Area of Potential Effects (APE). The resources and review process are described in the *Historic Architectural Resources Technical Report* (dated March 2016).

FRA recognizes multiple historic architectural properties are located within the APE. FRA has determined that the SSX Project would have "no effect" on a majority of these historic properties. Impacts of the SSX Project to historic properties in the APE would be limited to potential construction noise impacts to the South Station headhouse and potential operational noise impacts to the Fort Point Channel Historic District. A Construction Management Plan/Noise Control Plan would be implemented to assure construction noise would be in compliance with Federal Transit Administration and City of Boston construction noise limits. A moderate noise impact is expected to occur to sensitive receptors within the Fort Point Channel Historic District due to the removal of the USPS facility along Dorchester Avenue. To eliminate or minimize adverse noise impacts to the Fort Point Channel Historic District, a noise barrier would be installed along the length of the easternmost track to provide mitigation for the Fort Point Channel Historic District. FRA and MassDOT believe these mitigation measures will effectively eliminate or minimize any potential adverse construction-period and operational noise impacts.

The Fort Point Channel east and west seawalls are contributing structures to the Fort Point Channel Historic District. The SSX Project includes raising an approximately 700 foot section of Dorchester Avenue, including the west seawall, by 1.5 feet to match the elevation of the adjacent seawall to the north and south. MassDOT's proposal to raise the roadway and seawall is in response to recent projections of sea level rise of nearly two feet by the year 2050 and will help mitigate potential flooding. The proposed improvements to the seawall are further discussed in the FEIR that is available on the project website. The seawall improvements would not introduce

elements that are out of character with the Fort Point Channel Historic District and have been designed to be consistent with the Secretary of the Interior's (SOI) Standards for Rehabilitation[1].

The project would have no adverse visual effect on views to or from historic properties within the South Station APE because the physical improvements of the station expansion would be consistent with the scale of the existing South Station headhouse. The project, as designed, would not have any adverse visual impacts on the South Station headhouse or surrounding historic properties. Design principles have been developed to guide the planning and design of the project. Specific to historic preservation, planning and design principles include:

- Respecting South Station's rich history, its prominent location, and its role as the transportation hub for the region;
- Creating a work of civil architecture that complements the historic and architectural significance of the 1899 headhouse; and
- Recognizing and protecting the historic integrity of the existing South Station headhouse and its value as a public space.

On behalf of FRA, MassDOT intends to submit project plans to MHC at the 30% and 60% design phases for review, to confirm the design is consistent with the SSX Project's established design principles and SOI standards regarding new construction.

Effects of the SSX Project on historic properties located within the APE are included in *Historic Architectural Resources Technical Report* (March 2016) and excerpted below as Table 1. FRA has determined that the SSX Project would have **No Adverse Effect** on historic properties, provided conditions described in the technical report are implemented to avoid adverse project impacts.

Table 1 SSX Project Determination of Effects

Name	Determination of Effect	Conditions
Properties listed in the National and/or State Registers of Historic Places		
Leather District	No Effect	NA
Russia Wharf Buildings	No Effect	NA
Commercial Palace Historic District	No Effect	NA

1 See https://www.nps.gov/tps/standards/four-treatments/treatment-rehabilitation.htm

Table 1 SSX Project Determination of Effects

Name	Determination of Effect	Conditions
Fort Point Channel Historic District	No Adverse Effect	- Construction Management Plan/Noise Management Plan - South Station Noise Barrier - Fort Point Channel West Seawall Improvements consistent with SOI Standards
South Station Headhouse	No Adverse Effect	- Construction Management Plan/Noise Management Plan - Historic Preservation Design Principles - MHC Design Review
Fort Point Channel Landmark District	No Adverse Effect	- Construction Management Plan/Noise Management Plan - South Station Noise Barrier
Properties included in the Inventory of Historic and Archaeological Assets of the Commonwealth		
Chester Guild, Hide and Leather Machine Company	No Effect	NA
Chinatown District	No Effect	NA
Federal Reserve Bank of Boston	No Effect	NA
Kneeland Street Steam Heating Plant	No Effect	NA
South End Industrial Area	No Effect	NA
Weld Building	No Effect	NA
USPS General Mail Facility/South Postal Annex	No Historic Properties Affected – Recommended Not National Register Eligible	NA
Properties Not Previously Surveyed		
Gillette	No Effect	NA

FRA is currently seeking concurrence from MHC on this Conditional No Adverse Effect finding.

If your organization wishes to accept this Section 106 consulting party invitation and provide comments regarding the effects of the SSX Project on historic properties, please respond in writing (letter or email to laura.shick@dot.gov) at your earliest convenience. In your organization's response, please identify and provide contact information for a point of contact to receive any future Section 106-related correspondence or SSX Project updates. Lastly, if your organization accepts this invitation and would like to receive and review the full *Historic Architectural Resources Technical Report*, please contact: Mr. Essek Petrie at epetrie@hntb.com or (617) 532-2229.

If you have any questions about the SSX Project in general, please contact the individuals below:

MassDOT:
Mr. Stephen Woelfel
South Station Expansion Project Manager
Deputy Director, MassDOT Office of Transportation Planning
(857) 368-8889
steve.woelfel@state.ma.us

FRA:
Ms. Amishi Castelli
Environmental Protection Specialist
(617) 431-0416
amishi.castelli@dot.gov

Thank you for your interest in the SSX Project.

Sincerely,

Laura Shick
Federal Preservation Officer
Environmental & Corridor Planning Division
Office of Railroad Policy and Development

cc: Amishi Castelli, FRA
Steve Woelfel, MassDOT

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

10/19/16

Greg Galer
Executive Director
Boston Preservation Alliance
The Otis House
141 Cambridge Street
Boston, MA 02114

Re: South Station Expansion Project
Section 106 Consulting Party Invitation

Dear Mr. Galer,

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, preliminary engineering, and evaluation of environmental impacts pursuant to the National Environmental Policy Act (NEPA) and the Massachusetts Environmental Policy Act (MEPA). In accordance with MEPA, MassDOT prepared and filed a Draft Environmental Impact Report (DEIR) in October 2014 and the Final Environmental Impact Report (FEIR) in June 2016. MassDOT and FRA are currently developing an Environmental Assessment in accordance with NEPA, which is anticipated to be completed in 2017.

Concurrently with the NEPA process, FRA and MassDOT are considering potential impacts of the SSX Project on historic properties, as required by Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations at 36 CFR Part 800. To date, FRA and MassDOT have consulted with the Massachusetts Historical Commission (MHC), which serves as the State Historic Preservation Office, the Wampanoag Tribe of Gay Head (Aquinnah), the Mashpee Wampanoag Tribe, the Massachusetts Commission on Indian Affairs, and the Boston Landmarks Commission. As the SSX Project planning has advanced and because of the growing interest in passenger rail projects and planning efforts along the Northeast Corridor, FRA has identified your organization as a potential additional consulting party who may be interested in the project and its potential effects on historic properties. Therefore, by way of this letter, FRA formally invites your organization to be a consulting party in the Section 106 process for the SSX Project.

The SSX Project is being undertaken to expand South Station terminal capacity and related layover capacity in order to meet current and anticipated future high-speed, intercity, and commuter rail service needs. The SSX Project will include the following elements:

- Acquiring and demolishing the US Postal Service property on Dorchester Avenue;
- Reopening Dorchester Avenue to the general public and extending the Harborwalk;
- Expanding the South Station Terminal by adding four platforms and seven new tracks; modifying the rail connections to reduce conflicts; and constructing 385,000 square feet of new headhouse and a major station entrance along Dorchester Avenue; and
- Constructing rail layover facilities for storing trains at midday at Widett Circle and Readville-Yard 2. (MassDOT is analyzing a third layover facility at Beacon Park Yard under MassDOT's I-90 Allston Interchange Improvement project.)

Information and background on the SSX Project is available at:
http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

Determination of Effects to Historic Properties

FRA and MassDOT applied the Section 106 and MHC effect criteria (36 CFR 800.5 and 950 CMR 71.07(2)(b)) to determine if the project would have "no effect," "no adverse effect," or an "adverse effect" on historic properties located within the Area of Potential Effects (APE). The resources and review process are described in the *Historic Architectural Resources Technical Report* (dated March 2016).

FRA recognizes multiple historic architectural properties are located within the APE. FRA has determined that the SSX Project would have "no effect" on a majority of these historic properties. Impacts of the SSX Project to historic properties in the APE would be limited to potential construction noise impacts to the South Station headhouse and potential operational noise impacts to the Fort Point Channel Historic District. A Construction Management Plan/Noise Control Plan would be implemented to assure construction noise would be in compliance with Federal Transit Administration and City of Boston construction noise limits. A moderate noise impact is expected to occur to sensitive receptors within the Fort Point Channel Historic District due to the removal of the USPS facility along Dorchester Avenue. To eliminate or minimize adverse noise impacts to the Fort Point Channel Historic District, a noise barrier would be installed along the length of the easternmost track to provide mitigation for the Fort Point Channel Historic District. FRA and MassDOT believe these mitigation measures will effectively eliminate or minimize any potential adverse construction-period and operational noise impacts.

The Fort Point Channel east and west seawalls are contributing structures to the Fort Point Channel Historic District. The SSX Project includes raising an approximately 700 foot section of Dorchester Avenue, including the west seawall, by 1.5 feet to match the elevation of the adjacent seawall to the north and south. MassDOT's proposal to raise the roadway and seawall is in

response to recent projections of sea level rise of nearly two feet by the year 2050 and will help mitigate potential flooding. The proposed improvements to the seawall are further discussed in the FEIR that is available on the project website. The seawall improvements would not introduce elements that are out of character with the Fort Point Channel Historic District and have been designed to be consistent with the Secretary of the Interior's (SOI) Standards for Rehabilitation[1].

The project would have no adverse visual effect on views to or from historic properties within the South Station APE because the physical improvements of the station expansion would be consistent with the scale of the existing South Station headhouse. The project, as designed, would not have any adverse visual impacts on the South Station headhouse or surrounding historic properties. Design principles have been developed to guide the planning and design of the project. Specific to historic preservation, planning and design principles include:

- Respecting South Station's rich history, its prominent location, and its role as the transportation hub for the region;
- Creating a work of civil architecture that complements the historic and architectural significance of the 1899 headhouse; and
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On behalf of FRA, MassDOT intends to submit project plans to MHC at the 30% and 60% design phases for review, to confirm the design is consistent with the SSX Project's established design principles and SOI standards regarding new construction.

Effects of the SSX Project on historic properties located within the APE are included in *Historic Architectural Resources Technical Report* (March 2016) and excerpted below as Table 1. FRA has determined that the SSX Project would have **No Adverse Effect** on historic properties, provided conditions described in the technical report are implemented to avoid adverse project impacts.

Table 1 SSX Project Determination of Effects

Name	Determination of Effect	Conditions
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Leather District	No Effect	NA
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Table 1 SSX Project Determination of Effects

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Chinatown District	No Effect	NA
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Gillette	No Effect	NA

FRA is currently seeking concurrence from MHC on this Conditional No Adverse Effect finding.

If your organization wishes to accept this Section 106 consulting party invitation and provide comments regarding the effects of the SSX Project on historic properties, please respond in writing (letter or email to laura.shick@dot.gov) at your earliest convenience. In your organization's response, please identify and provide contact information for a point of contact to receive any future Section 106-related correspondence or SSX Project updates. Lastly, if your organization accepts this invitation and would like to receive and review the full *Historic Architectural Resources Technical Report*, please contact: Mr. Essek Petrie at epetrie@hntb.com or (617) 532-2229.

If you have any questions about the SSX Project in general, please contact the individuals below:

MassDOT:
Mr. Stephen Woelfel
South Station Expansion Project Manager
Deputy Director, MassDOT Office of Transportation Planning
(857) 368-8889
steve.woelfel@state.ma.us

FRA:
Ms. Amishi Castelli
Environmental Protection Specialist
(617) 431-0416
amishi.castelli@dot.gov

Thank you for your interest in the SSX Project.

Sincerely,

Laura Shick
Federal Preservation Officer
Environmental & Corridor Planning Division
Office of Railroad Policy and Development

cc: Amishi Castelli, FRA
Steve Woelfel, MassDOT

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

10/19/16

Kathy Abbott
President and CEO
Boston Harbor Now
15 State Street, Suite 1100
Boston, MA 02109

Re: South Station Expansion Project
Section 106 Consulting Party Invitation

Dear Ms. Abbott,

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, preliminary engineering, and evaluation of environmental impacts pursuant to the National Environmental Policy Act (NEPA) and the Massachusetts Environmental Policy Act (MEPA). In accordance with MEPA, MassDOT prepared and filed a Draft Environmental Impact Report (DEIR) in October 2014 and the Final Environmental Impact Report (FEIR) in June 2016. MassDOT and FRA are currently developing an Environmental Assessment in accordance with NEPA, which is anticipated to be completed in 2017.

Concurrently with the NEPA process, FRA and MassDOT are considering potential impacts of the SSX Project on historic properties, as required by Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations at 36 CFR Part 800. To date, FRA and MassDOT have consulted with the Massachusetts Historical Commission (MHC), which serves as the State Historic Preservation Office, the Wampanoag Tribe of Gay Head (Aquinnah), the Mashpee Wampanoag Tribe, the Massachusetts Commission on Indian Affairs, and the Boston Landmarks Commission. As the SSX Project planning has advanced and because of the growing interest in passenger rail projects and planning efforts along the Northeast Corridor, FRA has identified your organization as a potential additional consulting party who may be interested in the project and its potential effects on historic properties. Therefore, by way of this letter, FRA formally invites your organization to be a consulting party in the Section 106 process for the SSX Project.

The SSX Project is being undertaken to expand South Station terminal capacity and related layover capacity in order to meet current and anticipated future high-speed, intercity, and commuter rail service needs. The SSX Project will include the following elements:

- Acquiring and demolishing the US Postal Service property on Dorchester Avenue;
- Reopening Dorchester Avenue to the general public and extending the Harborwalk;
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Information and background on the SSX Project is available at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

Determination of Effects to Historic Properties

FRA and MassDOT applied the Section 106 and MHC effect criteria (36 CFR 800.5 and 950 CMR 71.07(2)(b)) to determine if the project would have "no effect," "no adverse effect," or an "adverse effect" on historic properties located within the Area of Potential Effects (APE). The resources and review process are described in the *Historic Architectural Resources Technical Report* (dated March 2016).

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Chinatown District	No Effect	NA
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South End Industrial Area	No Effect	NA
Weld Building	No Effect	NA
USPS General Mail Facility/South Postal Annex	No Historic Properties Affected – Recommended Not National Register Eligible	NA
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Gillette	No Effect	NA

FRA is currently seeking concurrence from MHC on this Conditional No Adverse Effect finding.

If your organization wishes to accept this Section 106 consulting party invitation and provide comments regarding the effects of the SSX Project on historic properties, please respond in writing (letter or email to laura.shick@dot.gov) at your earliest convenience. In your organization's response, please identify and provide contact information for a point of contact to receive any future Section 106-related correspondence or SSX Project updates. Lastly, if your organization accepts this invitation and would like to receive and review the full *Historic Architectural Resources Technical Report*, please contact: Mr. Essek Petrie at epetrie@hntb.com or (617) 532-2229.

If you have any questions about the SSX Project in general, please contact the individuals below:

MassDOT:
Mr. Stephen Woelfel
South Station Expansion Project Manager
Deputy Director, MassDOT Office of Transportation Planning
(857) 368-8889
steve.woelfel@state.ma.us

FRA:
Ms. Amishi Castelli
Environmental Protection Specialist
(617) 431-0416
amishi.castelli@dot.gov

Thank you for your interest in the SSX Project.

Sincerely,

Laura Shick
Federal Preservation Officer
Environmental & Corridor Planning Division
Office of Railroad Policy and Development

cc: Amishi Castelli, FRA
Steve Woelfel, MassDOT

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

10/17/16

Shawn P. Ford
President
Friends of Fort Point Channel
290 Congress Street, 2nd Floor
Boston, MA 02210

**Re: South Station Expansion Project
Section 106 Consulting Party Invitation**

Dear Mr. Ford,

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, preliminary engineering, and evaluation of environmental impacts pursuant to the National Environmental Policy Act (NEPA) and the Massachusetts Environmental Policy Act (MEPA). In accordance with MEPA, MassDOT prepared and filed a Draft Environmental Impact Report (DEIR) in October 2014 and the Final Environmental Impact Report (FEIR) in June 2016. MassDOT and FRA are currently developing an Environmental Assessment in accordance with NEPA, which is anticipated to be completed in 2017.

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The SSX Project is being undertaken to expand South Station terminal capacity and related layover capacity in order to meet current and anticipated future high-speed, intercity, and commuter rail service needs. The SSX Project will include the following elements:

- Acquiring and demolishing the US Postal Service property on Dorchester Avenue;
- Reopening Dorchester Avenue to the general public and extending the Harborwalk;
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Information and background on the SSX Project is available at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

Determination of Effects to Historic Properties

FRA and MassDOT applied the Section 106 and MHC effect criteria (36 CFR 800.5 and 950 CMR 71.07(2)(b)) to determine if the project would have "no effect," "no adverse effect," or an "adverse effect" on historic properties located within the Area of Potential Effects (APE). The resources and review process are described in the *Historic Architectural Resources Technical Report* (dated March 2016).

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If you have any questions about the SSX Project in general, please contact the individuals below:

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South Station Expansion Project Manager
Deputy Director, MassDOT Office of Transportation Planning
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Thank you for your interest in the SSX Project.

Sincerely,

Laura Shick
Federal Preservation Officer
Environmental & Corridor Planning Division
Office of Railroad Policy and Development

cc: Amishi Castelli, FRA
Steve Woelfel, MassDOT

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

10/19/16

Lissa Schwab
Preservation Planner
Fort Point Channel Landmark District Commission
Boston City Hall, Room 709
Boston, MA 02201

**Re: South Station Expansion Project
Section 106 Consulting Party Invitation**

Dear Ms. Schwab,

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, preliminary engineering, and evaluation of environmental impacts pursuant to the National Environmental Policy Act (NEPA) and the Massachusetts Environmental Policy Act (MEPA). In accordance with MEPA, MassDOT prepared and filed a Draft Environmental Impact Report (DEIR) in October 2014 and the Final Environmental Impact Report (FEIR) in June 2016. MassDOT and FRA are currently developing an Environmental Assessment in accordance with NEPA, which is anticipated to be completed in 2017.

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FRA:
Ms. Amishi Castelli
Environmental Protection Specialist
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Thank you for your interest in the SSX Project.

Sincerely,

Laura Shick
Federal Preservation Officer
Environmental & Corridor Planning Division
Office of Railroad Policy and Development

cc: Amishi Castelli, FRA
Steve Woelfel, MassDOT

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

10/19/16

Marc Draisen
Executive Director
Metropolitan Area Planning Council
60 Temple Place
Boston, MA 02111

**Re: South Station Expansion Project
Section 106 Consulting Party Invitation**

Dear Mr. Draisen,

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, preliminary engineering, and evaluation of environmental impacts pursuant to the National Environmental Policy Act (NEPA) and the Massachusetts Environmental Policy Act (MEPA). In accordance with MEPA, MassDOT prepared and filed a Draft Environmental Impact Report (DEIR) in October 2014 and the Final Environmental Impact Report (FEIR) in June 2016. MassDOT and FRA are currently developing an Environmental Assessment in accordance with NEPA, which is anticipated to be completed in 2017.

Concurrently with the NEPA process, FRA and MassDOT are considering potential impacts of the SSX Project on historic properties, as required by Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations at 36 CFR Part 800. To date, FRA and MassDOT have consulted with the Massachusetts Historical Commission (MHC), which serves as the State Historic Preservation Office, the Wampanoag Tribe of Gay Head (Aquinnah), the Mashpee Wampanoag Tribe, the Massachusetts Commission on Indian Affairs, and the Boston Landmarks Commission. As the SSX Project planning has advanced and because of the growing interest in passenger rail projects and planning efforts along the Northeast Corridor, FRA has identified your organization as a potential additional consulting party who may be interested in the project and its potential effects on historic properties. Therefore, by way of this letter, FRA formally invites your organization to be a consulting party in the Section 106 process for the SSX Project.

The SSX Project is being undertaken to expand South Station terminal capacity and related layover capacity in order to meet current and anticipated future high-speed, intercity, and commuter rail service needs. The SSX Project will include the following elements:

- Acquiring and demolishing the US Postal Service property on Dorchester Avenue;
- Reopening Dorchester Avenue to the general public and extending the Harborwalk;
- Expanding the South Station Terminal by adding four platforms and seven new tracks; modifying the rail connections to reduce conflicts; and constructing 385,000 square feet of new headhouse and a major station entrance along Dorchester Avenue; and
- Constructing rail layover facilities for storing trains at midday at Widett Circle and Readville-Yard 2. (MassDOT is analyzing a third layover facility at Beacon Park Yard under MassDOT's I-90 Allston Interchange Improvement project.)

Information and background on the SSX Project is available at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

Determination of Effects to Historic Properties

FRA and MassDOT applied the Section 106 and MHC effect criteria (36 CFR 800.5 and 950 CMR 71.07(2)(b)) to determine if the project would have "no effect," "no adverse effect," or an "adverse effect" on historic properties located within the Area of Potential Effects (APE). The resources and review process are described in the *Historic Architectural Resources Technical Report* (dated March 2016).

FRA recognizes multiple historic architectural properties are located within the APE. FRA has determined that the SSX Project would have "no effect" on a majority of these historic properties. Impacts of the SSX Project to historic properties in the APE would be limited to potential construction noise impacts to the South Station headhouse and potential operational noise impacts to the Fort Point Channel Historic District. A Construction Management Plan/Noise Control Plan would be implemented to assure construction noise would be in compliance with Federal Transit Administration and City of Boston construction noise limits. A moderate noise impact is expected to occur to sensitive receptors within the Fort Point Channel Historic District due to the removal of the USPS facility along Dorchester Avenue. To eliminate or minimize adverse noise impacts to the Fort Point Channel Historic District, a noise barrier would be installed along the length of the easternmost track to provide mitigation for the Fort Point Channel Historic District. FRA and MassDOT believe these mitigation measures will effectively eliminate or minimize any potential adverse construction-period and operational noise impacts.

The Fort Point Channel east and west seawalls are contributing structures to the Fort Point Channel Historic District. The SSX Project includes raising an approximately 700 foot section of Dorchester Avenue, including the west seawall, by 1.5 feet to match the elevation of the adjacent seawall to the north and south. MassDOT's proposal to raise the roadway and seawall is in response to recent projections of sea level rise of nearly two feet by the year 2050 and will help mitigate potential flooding. The proposed improvements to the seawall are further discussed in the FEIR that is available on the project website. The seawall improvements would not introduce

elements that are out of character with the Fort Point Channel Historic District and have been designed to be consistent with the Secretary of the Interior's (SOI) Standards for Rehabilitation[1].

The project would have no adverse visual effect on views to or from historic properties within the South Station APE because the physical improvements of the station expansion would be consistent with the scale of the existing South Station headhouse. The project, as designed, would not have any adverse visual impacts on the South Station headhouse or surrounding historic properties. Design principles have been developed to guide the planning and design of the project. Specific to historic preservation, planning and design principles include:

- Respecting South Station's rich history, its prominent location, and its role as the transportation hub for the region;
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On behalf of FRA, MassDOT intends to submit project plans to MHC at the 30% and 60% design phases for review, to confirm the design is consistent with the SSX Project's established design principles and SOI standards regarding new construction.

Effects of the SSX Project on historic properties located within the APE are included in *Historic Architectural Resources Technical Report* (March 2016) and excerpted below as Table 1. FRA has determined that the SSX Project would have **No Adverse Effect** on historic properties, provided conditions described in the technical report are implemented to avoid adverse project impacts.

Table 1 SSX Project Determination of Effects

Name	Determination of Effect	Conditions
Properties listed in the National and/or State Registers of Historic Places		
Leather District	No Effect	NA
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Chinatown District	No Effect	NA
Federal Reserve Bank of Boston	No Effect	NA
Kneeland Street Steam Heating Plant	No Effect	NA
South End Industrial Area	No Effect	NA
Weld Building	No Effect	NA
USPS General Mail Facility/South Postal Annex	No Historic Properties Affected – Recommended Not National Register Eligible	NA
Properties Not Previously Surveyed		
Gillette	No Effect	NA

FRA is currently seeking concurrence from MHC on this Conditional No Adverse Effect finding.

If your organization wishes to accept this Section 106 consulting party invitation and provide comments regarding the effects of the SSX Project on historic properties, please respond in writing (letter or email to laura.shick@dot.gov) at your earliest convenience. In your organization's response, please identify and provide contact information for a point of contact to receive any future Section 106-related correspondence or SSX Project updates. Lastly, if your organization accepts this invitation and would like to receive and review the full *Historic Architectural Resources Technical Report*, please contact: Mr. Essek Petrie at epetrie@hntb.com or (617) 532-2229.

If you have any questions about the SSX Project in general, please contact the individuals below:

MassDOT:
Mr. Stephen Woelfel
South Station Expansion Project Manager
Deputy Director, MassDOT Office of Transportation Planning
(857) 368-8889
steve.woelfel@state.ma.us

FRA:
Ms. Amishi Castelli
Environmental Protection Specialist
(617) 431-0416
amishi.castelli@dot.gov

Thank you for your interest in the SSX Project.

Sincerely,

Laura Shick
Federal Preservation Officer
Environmental & Corridor Planning Division
Office of Railroad Policy and Development

cc: Amishi Castelli, FRA
Steve Woelfel, MassDOT

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

10/19/16

James W. Igoe
President
Preservation Massachusetts
The Landmark Building
34 Main Street Extension, Suite 401
Plymouth, MA 02360

Re: South Station Expansion Project
Section 106 Consulting Party Invitation

Dear Mr. Igoe,

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, preliminary engineering, and evaluation of environmental impacts pursuant to the National Environmental Policy Act (NEPA) and the Massachusetts Environmental Policy Act (MEPA). In accordance with MEPA, MassDOT prepared and filed a Draft Environmental Impact Report (DEIR) in October 2014 and the Final Environmental Impact Report (FEIR) in June 2016. MassDOT and FRA are currently developing an Environmental Assessment in accordance with NEPA, which is anticipated to be completed in 2017.

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FRA is currently seeking concurrence from MHC on this Conditional No Adverse Effect finding.

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South Station Expansion Project Manager
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FRA:
Ms. Amishi Castelli
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Thank you for your interest in the SSX Project.

Sincerely,

Laura Shick
Federal Preservation Officer
Environmental & Corridor Planning Division
Office of Railroad Policy and Development

cc: Amishi Castelli, FRA
Steve Woelfel, MassDOT

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

10/19/16

Patricia A. Foley
President
Save the Harbor Save the Bay
212 Northern Ave, Suite 304 West
Boston, MA 02210

**Re: South Station Expansion Project
Section 106 Consulting Party Invitation**

Dear Ms. Foley,

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, preliminary engineering, and evaluation of environmental impacts pursuant to the National Environmental Policy Act (NEPA) and the Massachusetts Environmental Policy Act (MEPA). In accordance with MEPA, MassDOT prepared and filed a Draft Environmental Impact Report (DEIR) in October 2014 and the Final Environmental Impact Report (FEIR) in June 2016. MassDOT and FRA are currently developing an Environmental Assessment in accordance with NEPA, which is anticipated to be completed in 2017.

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Thank you for your interest in the SSX Project.

Sincerely,

Laura Shick
Federal Preservation Officer
Environmental & Corridor Planning Division
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cc: Amishi Castelli, FRA
Steve Woelfel, MassDOT

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

10/19/16

Wendy Landman
Executive Director
WalkBoston
Old City Hall
45 School Street
Boston, MA 02108

Re: South Station Expansion Project
Section 106 Consulting Party Invitation

Dear Ms. Landman,

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Weld Building	No Effect	NA
USPS General Mail Facility/South Postal Annex	No Historic Properties Affected – Recommended Not National Register Eligible	NA
Properties Not Previously Surveyed		
Gillette	No Effect	NA

FRA is currently seeking concurrence from MHC on this Conditional No Adverse Effect finding.

If your organization wishes to accept this Section 106 consulting party invitation and provide comments regarding the effects of the SSX Project on historic properties, please respond in writing (letter or email to laura.shick@dot.gov) at your earliest convenience. In your organization's response, please identify and provide contact information for a point of contact to receive any future Section 106-related correspondence or SSX Project updates. Lastly, if your organization accepts this invitation and would like to receive and review the full *Historic Architectural Resources Technical Report*, please contact: Mr. Essek Petrie at epetrie@hntb.com or (617) 532-2229.

If you have any questions about the SSX Project in general, please contact the individuals below:

MassDOT:
Mr. Stephen Woelfel
South Station Expansion Project Manager
Deputy Director, MassDOT Office of Transportation Planning
(857) 368-8889
steve.woelfel@state.ma.us

FRA:
Ms. Amishi Castelli
Environmental Protection Specialist
(617) 431-0416
amishi.castelli@dot.gov

Thank you for your interest in the SSX Project.

Sincerely,

Laura Shick
Federal Preservation Officer
Environmental & Corridor Planning Division
Office of Railroad Policy and Development

cc: Amishi Castelli, FRA
Steve Woelfel, MassDOT

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 28, 2016

Bettina Washington
Tribal Historic Preservation Officer
Wampanoag Tribe of Gay Head/Aquinnah
20 Black Brook Road
Aquinnah, MA 02535

Re: MassDOT South Station Expansion Project
Project Notification and No Effect Finding

Dear Ms. Washington:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. MassDOT on behalf of FRA previously reached out to your organization in October 2012 with an invitation to participate in the Section 106 process for the SSX Project. Subsequently, a Draft Environmental Impact Report (DEIR) was filed in October 2014 and the Final Environmental Impact Report (FEIR) was filed in June 2016. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to the filed in 2017.

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Information and background on the SSX Project can be found at:
http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

Ten Park Plaza, Suite 4160, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
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We are writing to update you on a SSX Project change in compliance with Section 106 of the National Historic Preservation Act and the preparation of an evaluation in accordance with Section 4(f) of the U.S. Department of Transportation Act of 1966. In addition, this letter provides FRA's determination of the SSX Project's effects on significant historic properties, in compliance with Section 106.

Project Update – Fort Point Channel Seawall

The Fort Point Channel east and west seawalls are contributing structures to the Fort Point Channel Historic District. The DEIR did not include any proposed improvements to the seawall. Project plans have been updated and the SSX Project now includes raising an approximately 700-foot section of Dorchester Avenue, including the west seawall, by 1.5 feet to match the elevation of the adjacent seawall to the north and south. MassDOT's proposal to raise the roadway and seawall is in response to recent projections of sea level rise of nearly two feet by the year 2050 and this will mitigate potential flooding on the site. These improvements to the seawall are further discussed in the FEIR that can be found on the project website. The seawall improvements would not introduce elements that are out of character with the Fort Point Channel Historic District and have been designed to be consistent with the Secretary of the Interior's Standards for Rehabilitation. Under Section 4(f), FRA proposes that the seawall improvements would have a *de minimis* impact on this 4(f)-protected historic property. In addition to elevating the seawall to matchup with the adjacent sections, MassDOT is also proposing to replace the existing deteriorated railing. Replacing the deteriorated railing is considered enhancing preservation of the resource and raising the elevation of the seawall represents mitigation to address sea level rise.

FRA Determination of Effects

FRA and MassDOT applied the Section 106 and MHC effect criteria (36 CFR 800.5 and 950 CMR 71.07(2)(b)) to determine if the project would have "no effect," "no adverse effect," or an "adverse effect" on historic properties located within the Area of Potential Effects (APE). The resources and review process are described in the *Historic Architectural Resources Technical Report* (dated March 2016).

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As noted above, the Fort Point Channel seawalls are contributing structures to the Fort Point Channel Historic District. The seawall improvements, designed to be consistent with the Secretary

of the Interior's Standards for Rehabilitation, would have no adverse effect on the historic seawall or district.

The project would have no adverse visual effect on views to or from historic properties within the South Station APE because the physical improvements of the station expansion would be consistent with the scale of the existing South Station headhouse. The project, as designed, would not have any adverse visual impacts on the South Station headhouse or surrounding historic properties. Design principles have been developed to guide the planning and design of the project. Specific to historic preservation, planning and design principles include:

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On behalf of FRA, MassDOT will submit project plans to MHC at the 30% and 60% design phases for review to confirm the design is consistent with the established design principles and historic preservation standards for new construction.

Effects of the SSX Project on historic properties located within the APE are included in *Historic Architectural Resources Technical Report* (March 2016) and excerpted below as Table 1. FRA has determined that the SSX Project would have **No Adverse Effect** on historic properties and either no use or *de minimis* impacts under Section 4(f), provided conditions described in the technical report are implemented to avoid adverse project impacts.

Table 1 SSX Project Determination of Effects

Name	Determination of Effect	Conditions
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If you would like to meet to further discuss the SSX Project, please contact Steve Woelfel, Deputy Director, to arrange a meeting. If you should have any issues of concern or require additional information, please also contact Steve Woelfel, Deputy Director, at the address below:

Stephen Woelfel
South Station Expansion Project Manager
Deputy Director, MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8889
steve.woelfel@state.ma.us

Your assistance in this matter is greatly appreciated.

Sincerely yours,

David J. Mohler
Executive Director
Office of Transportation Planning
Massachusetts Department of Transportation

cc: Amishi Castelli, FRA Environmental Protection Specialist

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 28, 2016

Ramona Peters
Tribal Historic Preservation Officer
Mashpee Wampanoag Tribe
766 Falmouth Road
Mataket Place Office A3
Mashpee, MA 02649

Re: MassDOT South Station Expansion Project
Project Notification and No Effect Finding

Dear Ms. Peters:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. MassDOT on behalf of FRA previously reached out to your organization in October 2012 with an invitation to participate in the Section 106 process for the SSX Project. Subsequently, a Draft Environmental Impact Report (DEIR) was filed in October 2014 and the Final Environmental Impact Report (FEIR) was filed in June 2016. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to the filed in 2017.

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Information and background on the SSX Project can be found at:
http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

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We are writing to update you on a SSX Project change in compliance with Section 106 of the National Historic Preservation Act and the preparation of an evaluation in accordance with Section 4(f) of the U.S. Department of Transportation Act of 1966. In addition, this letter provides FRA's determination of the SSX Project's effects on significant historic properties, in compliance with Section 106.

Project Update – Fort Point Channel Seawall

The Fort Point Channel east and west seawalls are contributing structures to the Fort Point Channel Historic District. The DEIR did not include any proposed improvements to the seawall. Project plans have been updated and the SSX Project now includes raising an approximately 700-foot section of Dorchester Avenue, including the west seawall, by 1.5 feet to match the elevation of the adjacent seawall to the north and south. MassDOT's proposal to raise the roadway and seawall is in response to recent projections of sea level rise of nearly two feet by the year 2050 and is will mitigate potential flooding on the site. These improvements to the seawall are further discussed in the FEIR that can be found on the project website. The seawall improvements would not introduce elements that are out of character with the Fort Point Channel Historic District and have been designed to be consistent with the Secretary of the Interior's Standards for Rehabilitation. Under Section 4(f), FRA proposes that the seawall improvements would have a *de minimis* impact on this 4(f)-protected historic property. In addition to elevating the seawall to matchup with the adjacent sections, MassDOT is also proposing to replace the existing deteriorated railing. Replacing the deteriorated railing is considered enhancing preservation of the resource and raising the elevation of the seawall represents mitigation to address sea level rise.

FRA Determination of Effects

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of the Interior's Standards for Rehabilitation, would have no adverse effect on the historic seawall or district.

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On behalf of FRA, MassDOT will submit project plans to MHC at the 30% and 60% design phases for review, to confirm the design is consistent with the established design principles and historic preservation standards for new construction.

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Lastly, if your organization accepts this invitation and would like to receive and review the full *Historic Architectural Resources Technical Report*, please contact: Mr. Essek Petrie at epetrie@hntb.com or (617) 532-2229.

If you would like to meet to further discuss the SSX Project, please contact Steve Woelfel, Deputy Director, to arrange a meeting. If you should have any issues of concern or require additional information, please also contact Steve Woelfel, Deputy Director, at the address below:

Stephen Woelfel
South Station Expansion Project Manager
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10 Park Plaza, Suite 4150
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steve.woelfel@state.ma.us

Your assistance in this matter is greatly appreciated.

Sincerely yours,

David J. Mohler
Executive Director
Office of Transportation Planning
Massachusetts Department of Transportation

cc: Amishi Castelli, FRA Environmental Protection Specialist

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 28, 2016

John Peters
Executive Director
Massachusetts Commission on Indian Affairs
100 Cambridge Street
Suite 300
Boston, MA 02114

Re: MassDOT South Station Expansion Project
Project Notification and No Effect Finding

Dear Mr. Peters:

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David J. Mohler
Executive Director
Office of Transportation Planning
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cc: Amishi Castelli, FRA Environmental Protection Specialist

Charles D. Baker, Governor
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Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

October 28, 2016

Roseanne Foley
Executive Director
Boston Landmarks Commission
City Hall
1 City Hall Square
Boston, MA 02201

Re: MassDOT South Station Expansion Project
Project Notification and No Effect Finding

Dear Ms. Foley:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. Subsequently, a Draft Environmental Impact Report (DEIR) was filed in October 2014 and the Final Environmental Impact Report (FEIR) was filed in June 2016. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to the filed in 2017.

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FRA Determination of Effects

FRA and MassDOT applied the Section 106 and MHC effect criteria (36 CFR 800.5 and 950 CMR 71.07(2)(b)) to determine if the project would have "no effect," "no adverse effect," or an "adverse effect" on historic properties located within the Area of Potential Effects (APE). The resources and review process are described in the *Historic Architectural Resources Technical Report* (dated March 2016).

FRA recognizes multiple historic architectural properties are located within the APE. The project would have "no effect" on a majority of the historic properties. Impacts of the SSX Project to historic properties in the APE would be limited to potential construction noise impacts to the South Station headhouse and potential operational noise impacts to the Fort Point Channel Historic District. A Construction Management Plan/Noise Control Plan would be implemented to assure construction noise would be in compliance with Federal Transit Administration and City of Boston construction noise limits. A moderate noise impact is expected to occur to sensitive receptors within the Fort Point Channel Historic District due to the removal of the USPS facility along Dorchester Avenue. To eliminate or minimize adverse noise impacts to the Fort Point Channel Historic District, a noise barrier would be installed along the length of the easternmost track to provide mitigation. FRA and MassDOT believe these mitigation measures will effectively eliminate or minimize any potential adverse construction-period and operational noise impacts.

As noted above, the Fort Point Channel seawalls are contributing structures to the Fort Point Channel Historic District. The seawall improvements, designed to be consistent with the Secretary

of the Interior's Standards for Rehabilitation, would have no adverse effect on the historic seawall or district.

The project would have no adverse visual effect on views to or from historic properties within the South Station APE because the physical improvements of the station expansion would be consistent with the scale of the existing South Station headhouse. The project, as designed, would not have any adverse visual impacts on the South Station headhouse or surrounding historic properties. Design principles have been developed to guide the planning and design of the project. Specific to historic preservation, planning and design principles include:

- Respecting South Station's rich history, its prominent location, and its role as the transportation hub for the region;
- Creating a work of civil architecture that complements the historic and architectural significance of the 1899 headhouse; and
- Recognizing and protecting the historic integrity of the existing South Station headhouse and its value as a public space.

On behalf of FRA, MassDOT will submit project plans to MHC at the 30% and 60% design phases for review, to confirm the design is consistent with the established design principles and historic preservation standards for new construction.

Effects of the SSX Project on historic properties located within the APE are included in *Historic Architectural Resources Technical Report* (March 2016) and excerpted below as Table 1. FRA has determined that the SSX Project would have **No Adverse Effect** on historic properties and either no use or *de minimis* impacts under Section 4(f), provided conditions described in the technical report are implemented to avoid adverse project impacts.

Table 1 SSX Project Determination of Effects

Name	Determination of Effect	Conditions
Properties listed in the National and/or State Registers of Historic Places		
Leather District	No Effect	NA
Russia Wharf Buildings	No Effect	NA
Commercial Palace Historic District	No Effect	NA
Fort Point Channel Historic District	No Adverse Effect	- Construction Management Plan/Noise Management Plan - South Station Noise Barrier - Fort Point Channel West Seawall Repairs

Table 1 SSX Project Determination of Effects

Name	Determination of Effect	Conditions
South Station Headhouse	No Adverse Effect	- Construction Management Plan/Noise Management Plan - Historic Preservation Design Principles - MHC Design Review
Fort Point Channel Landmark District	No Adverse Effect	- Construction Management Plan/Noise Management Plan - South Station Noise Barrier
Properties included in the Inventory of Historic and Archaeological Assets of the Commonwealth		
Chester Guild, Hide and Leather Machine Company	No Effect	NA
Chinatown District	No Effect	NA
Federal Reserve Bank of Boston	No Effect	NA
Kneeland Street Steam Heating Plant	No Effect	NA
South End Industrial Area	No Effect	NA
Weld Building	No Effect	NA
USPS General Mail Facility/South Postal Annex	No Historic Properties Affected – Recommended Not National Register Eligible	NA
Properties Not Previously Surveyed		
Gillette	No Effect	NA

Lastly, if your organization accepts this invitation and would like to receive and review the full *Historic Architectural Resources Technical Report*, please contact: Mr. Essek Petrie at epetrie@hntb.com or (617) 532-2229.

If you would like to meet to further discuss the SSX Project, please contact Steve Woelfel, Deputy Director, to arrange a meeting. If you should have any issues of concern or require additional information, please also contact Steve Woelfel, Deputy Director, at the address below:

Stephen Woelfel
South Station Expansion Project Manager
Deputy Director, MassDOT Office of Transportation Planning
10 Park Plaza, Suite 4150
Boston, MA 02116
857-368-8889
steve.woelfel@state.ma.us

Your assistance in this matter is greatly appreciated.

Sincerely yours,

David J. Mohler
Executive Director
Office of Transportation Planning
Massachusetts Department of Transportation

cc: Amishi Castelli, FRA Environmental Protection Specialist

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

November 23, 2016

Brona Simon
State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

Re: South Station Expansion Project
Continuation of Section 106 Consultation
Finding of Conditional No Adverse Effect
MHC# RC.53253; EEA#15028

Dear Ms. Simon:

Thank you for your letter to the Federal Railroad Administration (FRA) dated August 30, 2016 regarding the Massachusetts Department of Transportation's (MassDOT) proposed South Station Expansion (SSX) Project. Your letter was a response to FRA's letter dated August 4, 2016, regarding FRA's proposed conditional No Adverse Effect finding for the project. FRA understands that the Massachusetts Historical Commission (MHC) was not able to concur with FRA's determination and requested more information. This letter responds to that request.

- *Additional Section 106 Consulting Parties* – MHC requested that the Friends of Fort Point Channel be invited to participate in the Section 106 process as a consulting party. FRA agreed to this request, and an invitation letter was sent to Shawn Ford, President, Friends of Fort Point Channel on October 19, 2016. Additionally, consulting party invitation letters were sent to the following: Stephen Gardner, Executive Vice President, Chief of NEC Business Development, Amtrak; Greg Galer, Executive Director, Boston Preservation Alliance; Kathy Abbott, President and CEO, Boston Harbor Now; Lissa Schwab, Preservation Planner, Fort Point Channel Landmark District Commission; Marc Draisen, Executive Director, Metropolitan Area Planning Council; James Igoe, President, Preservation Massachusetts; Patricia A. Foley, President, Save the Harbor Save the Bay; Wendy Landman, Executive Director, WalkBoston. To date, FRA has received responses from Boston Harbor Now and Amtrak; both entities accepted the invitation to participate as a Section 106 consulting party. MassDOT, on FRA's behalf, will follow up with the remaining parties that have not responded, and will provide all consulting parties with copies of the relevant Section 106 documentation. If any consulting party has questions about or objects to FRA's findings, FRA and MassDOT (and MHC as necessary) will work with that party to resolve the issue.

- *Seawall Modifications* – As described in FRA's August 4th letter, and the revised *Historic Architectural Resources Technical Report* (March 2016), the granite for the new seawall will either be recovered from near the seawall/channel or acquired from a local Massachusetts quarry. If granite blocks are visible within Fort Point Channel at low tide and are readily accessible, they may be salvaged and used to raise the seawall. No dredging of the Fort Point Channel would be undertaken. If recovered granite is not available, granite will be acquired from a local quarry. The

original list from the American Society of Civil Engineers, June 1900 paper is enclosed. This list will be utilized to assist in finding a granite source that matches the existing seawall. Samples of the existing and new granite will be compared to match the color and texture. The granite blocks will be cut and laid to match the existing wall.

- *U.S. Postal Service (USPS) General Mail Facility (GMF)* – The SSX Project would acquire and demolish the USPS GMF. Although the demolition of the USPS facility after it is acquired and vacated is part of the SSX Project, the relocation of the USPS facility is not. For purposes of the Environmental Assessment (EA) that is currently being prepared for the SSX Project in accordance with the National Environmental Policy Act (NEPA), FRA and MassDOT analyzed the potential impacts of relocating the USPS facility to a potential future site (referred to as the Reserved Channel site) in the Seaport area of Boston. However, USPS would determine the future location(s) to which its operations would be relocated, and any such relocation would be subject to separate Section 106 and NEPA reviews led by USPS. FRA understands that MassDOT has recently reengaged USPS in negotiations regarding the purchase of the property adjacent to South Station. For information on the status of these negotiations and the USPS relocation, FRA recommends that MHC contact Mr. Stephen Woelfel, Deputy Director, MassDOT Office of Transportation Planning at (857) 368-8889 or steve.woelfel@state.ma.us.
- *Visual and Design Considerations* – Design Principles have been developed to guide the planning and design of the SSX Project. These principles are included in Section 2.1.4 of the *Final Environmental Impact Report* (June 2016)[1] (FEIR) and excerpted in the *Historical Architectural Resources Technical Report* (March 2016). A copy of the Design Principles is enclosed. In addition, the new construction will be designed to be consistent with the Secretary of the Interior's (SOI) Standards for Rehabilitation and guidelines for new construction: "New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment."[2]
- *Conditional No Adverse Effect Finding* – In its August 4, 2016 letter to MHC, FRA made a conditional No Adverse Effect finding, provided that certain conditions are met to eliminate potential adverse impacts of the SSX Project on historic architectural properties. MHC requested that FRA's determination be detailed more clearly. The information below is intended to fulfill that request. The current funding for the SSX Project is for preliminary engineering and environmental analysis. The measures described below would be implemented by MassDOT if/when the SSX Project advances through further design and construction.
  - MassDOT will develop and implement a Construction Management Plan/Noise Control Plan to ensure construction noise is in compliance with Federal Transit Administration and City of Boston construction noise limits. Performance criteria will be developed for all noise-sensitive sites and a monitoring program will be followed throughout construction.
  - MassDOT will install a noise barrier along the easternmost track on the Dorchester Avenue side of Boston South Station to minimize or eliminate adverse noise impacts to properties to the east, including the Fort Point Channel Historic District. The USPS GMF currently serves

1 South Station Expansion Project Final Environmental Impact Report, June 2016. Available at: https://www.massdot.state.ma.us/southstationexpansion/Documents.aspx

2 Grimmer, Anne and Kay Weeks. The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines for Applying the Standards, June 1992. Government Printing Office, Washington DC. Available at: https://www.nps.gov/tps/standards/rehabilitation/rehab/index.htm

as an effective noise barrier; with the eventual removal of this building, a new noise barrier will need to be installed. Detailed information about the new noise barrier is available in the FEIR and forthcoming EA.

- The Fort Point Channel east seawall will be raised 1.5 feet along an approximately 700-foot section of the east seawall along Dorchester Avenue to match the elevation of the adjacent east seawall to the north and south. The seawall will match the existing in material, size, color, texture, and configuration. The work will be undertaken in accordance with the SOI Standards for Rehabilitation.
- MassDOT will design all new construction in accordance with the aforementioned Design Principles and the SOI Standards for Rehabilitation and guidelines for new construction. MassDOT will submit project plans to MHC for review at the 30% and 60% design phases. MassDOT will address any MHC concerns prior to finalization of the plans. Interested consulting parties will also be given the opportunity to review the 30% and 60% design plans.

In accordance with 36 CFR 800.5(c), FRA is seeking written concurrence from your office with FRA's conditional No Adverse Effect finding. If you have questions about the SSX Project or require additional information, please contact me at (202) 366-0340 or laura.shick@dot.gov. FRA looks forward to a response within 30 days of MHC's receipt of this letter.

Sincerely,

Laura Shick
Federal Preservation Officer
Environmental & Corridor Planning Division
Office of Railroad Policy and Development
Enclosures

Enc: ASCE Paper
SSX Project Design Principles

cc: Amishi Castelli, FRA
Stephen Woelfel, MassDOT
Essek Petrie, HNTB

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

Bettina Washington
Tribal Historic Preservation Officer
Wampanoag Tribe of Gay Head/Aquinnah
20 Black Brook Road
Aquinnah, MA 02535

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Ms. Washington:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

MassDOT, on behalf of FRA, previously reached out to your organization with an invitation to participate in the Section 106 process of the National Historic Preservation Act for the SSX Project. Based on your interest to participate in the Section 106 consultation process I have included the following items for your information:

1. August 2, 2016 letter from FRA to Massachusetts Historical Commission (MHC) continuing the Section 106 consultation process and presenting a Conditional Finding of No Adverse Effect,

2. August 30, 2016 letter from MHC to FRA stating that more information is necessary regarding the concurrence of Conditional Finding of No Adverse Effect,

3. November 23, 2016 letter from FRA to MHC providing the additional information requested in the August 30, 2016 letter,

4. South Station Expansion Project Historic Architectural Resources Technical Report, dated March 2016, as referenced in November 23, 2016 letter,

5. June 1900 American Society of Civil Engineers (ASCE) paper regarding the source of granite used for the Fort Point Channel seawall and referenced in the November 23, 2016 letter, and

6. Updated SSX project Station Design Principles, dated June 2016, from the SSX Final Environmental Impact Report (FEIR) and referenced in the November 23, 2016 letter.

The sharing of this documentation is provided to assist the FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

Ramona Peters
Tribal Historic Preservation Officer
Mashpee Wampanoag Tribe
766 Falmouth Road
Mataket Place Office A3
Mashpee, MA 02649

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Ms. Peters:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

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Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

John Peters
Executive Director
Massachusetts Commission on Indian Affairs
100 Cambridge Street
Suite 300
Boston, MA 02114

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Mr. Peters:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

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Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

Roseanne Foley
Executive Director
Boston Landmarks Commission
City Hall
1 City Hall Square
Boston, MA 02201

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Ms. Foley:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

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Ten Park Plaza, Suite 4160, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
www.mass.gov/massdot

6. Updated SSX project Station Design Principles, dated June 2016, from the SSX Final Environmental Impact Report (FEIR) and referenced in the November 23, 2016 letter.

The sharing of this documentation is provided to assist the FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

Rachel Borgatti
Executive Director
Friends of Fort Point Channel
290 Congress Street
2nd Floor
Boston, MA 02110

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Ms.Borgatti:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

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The sharing of this documentation is provided to assist the FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

Lissa Schwab
Fort Point Channel Landmark District Commission
City Hall, Room 709
1 City Hall Square
Boston, MA 02201

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Ms.Schwab:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

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The sharing of this documentation is provided to assist the FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

Anthony DeDominicis
Senior Manager
Infrastructure Planning
National Railroad Passenger Corporation (Amtrak)
2955 Market Street, 3N-194
Philadelphia, PA 19104

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Mr. DeDominicis:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

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The sharing of this documentation is provided to assist the FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

Marc Draisen
Executive Director
Metropolitan Area Planning Council
60 Temple Place
6th Floor
Boston, MA 02111

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Mr. Draisen:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

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The sharing of this documentation is provided to assist the FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

Greg Galer
Executive Director
Boston Preservation Alliance
Old City Hall
141 Cambridge Street
Boston, MA 02114

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Mr. Galer:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

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4. South Station Expansion Project Historic Architectural Resources Technical Report, dated March 2016, as referenced in November 23, 2016 letter,

5. June 1900 American Society of Civil Engineers (ASCE) paper regarding the source of granite used for the Fort Point Channel seawall and referenced in the November 23, 2016 letter, and

6. Updated SSX project Station Design Principles, dated June 2016, from the SSX Final Environmental Impact Report (FEIR) and referenced in the November 23, 2016 letter.

The sharing of this documentation is provided to assist the FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

James Igoe
President
Preservation Massachusetts
34 Main Street Extension
Suite 401
Plymouth, MA 02360

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Mr. Igoe:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

MassDOT, on behalf of FRA, previously reached out to your organization with an invitation to participate in the Section 106 process of the National Historic Preservation Act for the SSX Project. Based on your interest to participate in the Section 106 consultation process I have included the following items for your information:

1. August 2, 2016 letter from FRA to Massachusetts Historical Commission (MHC) continuing the Section 106 consultation process and presenting a Conditional Finding of No Adverse Effect,

2. August 30, 2016 letter from MHC to FRA stating that more information is necessary regarding the concurrence of Conditional Finding of No Adverse Effect,

3. November 23, 2016 letter from FRA to MHC providing the additional information requested in the August 30, 2016 letter,

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The sharing of this documentation is provided to assist the FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

Jill Valdes Horwood
Director of Waterfront Policy
Boston Harbor Now
15 State Street
Suite 1100
Boston, MA 02109

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Ms. Valdes Horwood:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

MassDOT, on behalf of FRA, previously reached out to your organization with an invitation to participate in the Section 106 process of the National Historic Preservation Act for the SSX Project. Based on your interest to participate in the Section 106 consultation process I have included the following items for your information:

1. August 2, 2016 letter from FRA to Massachusetts Historical Commission (MHC) continuing the Section 106 consultation process and presenting a Conditional Finding of No Adverse Effect,

2. August 30, 2016 letter from MHC to FRA stating that more information is necessary regarding the concurrence of Conditional Finding of No Adverse Effect,

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The sharing of this documentation is provided to assist the FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

Patty Foley
President
Save the Harbor/Save the Bay
212 Northern Avenue
Suite 304 West
Boston, MA 02210

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Ms.Foley:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

MassDOT, on behalf of FRA, previously reached out to your organization with an invitation to participate in the Section 106 process of the National Historic Preservation Act for the SSX Project. Based on your interest to participate in the Section 106 consultation process I have included the following items for your information:

1. August 2, 2016 letter from FRA to Massachusetts Historical Commission (MHC) continuing the Section 106 consultation process and presenting a Conditional Finding of No Adverse Effect,

2. August 30, 2016 letter from MHC to FRA stating that more information is necessary regarding the concurrence of Conditional Finding of No Adverse Effect,

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6. Updated SSX project Station Design Principles, dated June 2016, from the SSX Final Environmental Impact Report (FEIR) and referenced in the November 23, 2016 letter.

The sharing of this documentation is provided to assist the FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

December 1, 2016

Wendy Landman
Executive Director
WalkBoston
45 School Street
Boston, MA 02108

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Ms. Landman:

The Massachusetts Department of Transportation (MassDOT), with funding from the Federal Railroad Administration (FRA), is undertaking an effort to evaluate the expansion of South Station. The South Station Expansion Project (SSX Project) includes planning, National Environmental Policy Act/Massachusetts Environmental Policy Act reviews, and preliminary engineering. An Environmental Assessment pursuant to the National Environmental Policy Act is anticipated to be filed in 2017. Information and background on the SSX Project can be found at: http://www.massdot.state.ma.us/southstationexpansion/Home.aspx.

MassDOT, on behalf of FRA, previously reached out to your organization with an invitation to participate in the Section 106 process of the National Historic Preservation Act for the SSX Project. Based on your interest to participate in the Section 106 consultation process I have included the following items for your information:

1. August 2, 2016 letter from FRA to Massachusetts Historical Commission (MHC) continuing the Section 106 consultation process and presenting a Conditional Finding of No Adverse Effect,

2. August 30, 2016 letter from MHC to FRA stating that more information is necessary regarding the concurrence of Conditional Finding of No Adverse Effect,

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6. Updated SSX project Station Design Principles, dated June 2016, from the SSX Final Environmental Impact Report (FEIR) and referenced in the November 23, 2016 letter.

The sharing of this documentation is provided to assist the FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

Stephen Woelfel
Project Manager
South Station Expansion Project

From:	Shick, Laura (FRA)
To:	Essek Petrie; Steve Woelfel (DOT) (steve.woelfel@state.ma.us)
Subject:	FW: Boston South Station Expansion Project Consulting Invitation
Date:	Wednesday, November 09, 2016 2:24:34 PM

FYI

Laura A. Shick
Environmental Protection Specialist
U.S. Department of Transportation
Federal Railroad Administration
Office of Railroad Policy and Development
1200 New Jersey Avenue, SE
Washington, DC 20590
(202) 366-0340

From: Jill Valdes Horwood [mailto:jvhorwood@bostonharbornow.org]
Sent: Monday, November 07, 2016 11:22 AM
To: Shick, Laura (FRA)
Subject: Boston South Station Expansion Project Consulting Invitation

Good morning Laura,

Apologies for the late reply. I wanted to confirm that Boston Harbor Now would be pleased to take part in Section 106 consulting party. I will be the primary contact person for our organization. Best way to reach me:

Jill Valdes Horwood
Boston Harbor Now
15 State Street, Ste 1100
Boston, MA 02109

Thank you very much.

Best,

Jill Valdes Horwood, JD, LLM
Director of Waterfront Policy
Boston Harbor Now

15 State Street, Suite 1100
Boston, MA 02109-3572
o: (617) 223-8672
c: (305) 978-8976
www.bostonharbornow.org

NATIONAL RAILROAD PASSENGER CORPORATION
60 Massachusetts Avenue, NE, Washington, DC 20002

November 15, 2016

STEPHEN J. GARDNER
Executive Vice President
NEC Infrastructure & Investment Development and Real Estate

Laura Shick
Federal Preservation Officer
Office of Railroad Policy and Development
Federal Railroad Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: South Station Expansion Project, Section 106 Consulting Party Invitation

Dear Ms. Shick:

Thank you for the invitation to become a consulting party under Section 106 of the National Historic Preservation Act for the South Station Expansion Project in Boston, Massachusetts. Amtrak accepts your invitation to participate as a consulting party.

Our contacts for this project are as follows:

Primary Contact:
Anthony DeDominicis
Senior Infrastructure Planning Manager
Amtrak, NEC Business Development
2955 Market Street, 3N-194
Philadelphia, PA 19104
Anthony.DeDominicis@amtrak.com
215-349-1200

Secondary Contact:
Johnette Davies
Senior Historic Preservation Specialist
Amtrak, Engineering
2955 Market Street, Mailbox 55
Philadelphia, PA 19104
Johnette.Davies@amtrak.com
215-349-1354

Based on the information provided in the invitation letter, Amtrak has no objection with the Conditional No Adverse Effect finding for the project. As per the letter, it is noted that future design submissions will be transmitted to the Massachusetts Historical Commission (MHC) for review and comment. Please keep us informed on whether, and at what times, Amtrak and other consulting parties will be engaged for the design review process as the project progresses.

Amtrak also looks forward to reviewing the forthcoming Environmental Assessment (EA) prepared by the FRA under the National Environmental Policy Act. We would appreciate receiving notification on that document when it is available for review and comment.

Thank you for the opportunity to participate as a consulting party, and we look forward to working with you on this important project.

Regards,

Stephen Gardner
Executive Vice President

cc: Tom Moritz, Amtrak
Anthony DeDominicis, Amtrak
Johnette Davies, Amtrak

Mashpee Wampanoag Tribe
Section 106 Review
Consultation Response Form

Project Docket Number:	South Station Expansion Project (SSX)
Consultant/Environmental Firm:	FRA/FHWA/MassDOT
Address or Location Description:	25 Dorchester Ave
City, State:	Boston, MA
Point of Contact	Stephen Woelfel

Response:

☒ We have no concerns related to the proposed project. MWT anticipates no adverse effects to our sites of cultural significance, by you or your client.

☐ The MWT considers this project in compliance with the MWT's section 106 review process with agreed upon mitigations measures.

☐ This site will require the on-site presence of a Tribal Cultural Resource Monitor during ground disturbing activities. Contact the Compliance Review Supervisor with construction schedule.

☐ This project has the potential to have "adverse effects" to historic or cultural resources important to our tribe. We recommend the following actions:

If the project scope of work should change we will need opportunity to review further.

This consultation process is in compliance to the National Historic Preservation Act of 1966 and all relevant amendments including but not limited to section 106 and 36 CFR 800.

Condition: In the case that archeological resources or human remains are found during construction, **you must immediately stop construction and notify our office.**.

Ramona Peters

Ramona Peters, THPO - Compliance Review Supervisor
Tribal Historic Preservation Department

12.15.16
Date

Mashpee Wampanoag Indian Tribal Council
Historic Preservation Department
483 Great Neck Rd South, Mashpee, MA 02649 | Phone: 508-477-0208*101 | Email: 106review@mwtribe.com

From:	Castelli, Amishi (FRA)
To:	Essek Petrie
Cc:	Steve Woelfel (DOT) (steve.woelfel@state.ma.us); Shick, Laura (FRA); Mielke, Matthew S [USA] (Mielke_Matthew@bah.com)
Subject:	FW: South Station Expansion Section 106 Consultation Invitation
Date:	Tuesday, December 20, 2016 11:48:48 AM
Attachments:	DOT, Greg Galer, Laura Shick FPO, South Station Expansion, 10-19-1610282016094839.pdf

---

FYI

From: Greg Galer [mailto:ggaler@bostonpreservation.org]
Sent: Tuesday, December 20, 2016 11:46 AM
To: Shick, Laura (FRA)
Cc: Sherva, Elizabeth; Alison Frazee; Castelli, Amishi (FRA); steve.woelfel@state.ma.us
Subject: South Station Expansion Section 106 Consultation Invitation

Dear Ms. Shick,

I apologize for my tardy response to the attached letter inviting the Boston Preservation Alliance to be Consulting Party regarding Section 106 review of the proposed South Station Expansion. As I review files as we approach the end of the year I realize that we never replied on this item.

The Alliance would like to be a consulting party and have opportunity to comment on the project and its design as it develops.

Thank you.

Best for the Holidays and the New Year,
Greg

--
Greg Galer, Executive Director
Boston Preservation Alliance

** WE'VE MOVED **
The Otis House
141 Cambridge Street
Boston, MA 02114
617-367-2458

Protecting places, promoting vibrancy, preserving character

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December 20, 2016

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

Laura Shick
Federal Preservation Officer
Federal Railroad Administration
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: South Station Expansion Project, Summer Street & Atlantic Avenue, Boston (Downtown), MA; MHC# RC.53253, **EEA# 15028**

Dear Ms. Shick:

Staff of the Massachusetts Historical Commission (MHC) have reviewed the information that was submitted, received at this office on November 28, 2016, for the project referenced above. The staff of the MHC have the following comments.

The MHC is unable to concur with the Federal Railroad Administration's (FRA) finding of Conditional No Adverse Effect because the consulting parties have not yet commented on the project.

The MHC understands that the Boston Preservation Alliance, Boston Harbor Now, and Amtrak have accepted the FRA's invitation to be a consulting party. Per your correspondence, received November 28, 2016, "MassDOT, on FRA's behalf, will follow up with the remaining parties that have not responded, and will provide all consulting parties with copies of the relevant Section 106 documentation." At this time, it is unclear if MassDOT has attempted to follow up with the other consulting party invitations. It is also unclear if the consulting parties identified above have received the project information.

The MHC looks forward to receiving comments from the consulting parties.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800), M.G.L. Chapter 9, Sections 26-27C (950 CMR 71.00) and MEPA (301 CMR 11). Please contact Jonathan K. Patton or Elizabeth Sherva of my staff if you have any questions.

Sincerely,

Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc: Mary Beth Mello, Federal Transit Administration
Michelle Fishburne, Federal Railroad Administration
Matthew Ciborowski, MassDOT
Stephen Woelfel, MassDOT
Andrew Brennan, MBTA
Secretary Matthew Beaton, EEA/MEPA Unit
Boston Landmarks Commission
Greg Galer, Boston Preservation Alliance
Boston Harbor Now
Amtrak

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

January 18, 2017

Anthony DeDominicis
Senior Infrastructure Planning Manager
Amtrak, NEC Business Development
2955 Market Street, 3N-194
Philadelphia, PA 19104

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Mr. DeDominicis

The Massachusetts Department of Transportation (MassDOT), on behalf of the Federal Railroad Administration (FRA), appreciates your organization accepting the invitation to participate in the South Station Expansion (SSX) Project consultation process, in accordance with Section 106 of the National Historic Preservation Act, as amended. FRA is providing grant funding to MassDOT to complete state and federal environmental reviews and preliminary engineering for the SSX Project. Currently, there is no federal funding identified for final design or construction of the SSX Project. This letter confirms your organization as a SSX Project Section 106 consulting party.

MassDOT has provided your organization with all current, up-to-date project information in letters dated October 19 and December 1, 2016. The materials included FRA's SSX Project Conditional No Adverse Effect finding. One of the conditions is that conceptual designs and architectural drawings of the proposed improvements to the historic and expanded South Station headhouse and to the Fort Point Channel seawall will be provided to the Massachusetts Historical Commission (MHC) and consulting parties at the 30% and 60% design phases. The plans will be submitted to the MHC and consulting parties to confirm the design of these project elements is consistent with the SSX Project's established design principles and Secretary of the Interior's Standards for Rehabilitation regarding new construction. MassDOT, on behalf of FRA, will follow up with your organization to provide updated project information and to seek input when project plans are prepared.

This consultation process update is provided to assist FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

David J. Mohler
Executive Director
Office of Transportation Planning

Ten Park Plaza, Suite 4160, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
www.mass.gov/massdot

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

January 18, 2017

Jill Valdes Horwood
Director of Waterfront Policy
Boston Harbor Now
15 State Street, Suite 1100
Boston, MA 02109

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Ms. Horwood:

The Massachusetts Department of Transportation (MassDOT), on behalf of the Federal Railroad Administration (FRA), appreciates your organization accepting the invitation to participate in the South Station Expansion (SSX) Project consultation process, in accordance with Section 106 of the National Historic Preservation Act, as amended. FRA is providing grant funding to MassDOT to complete state and federal environmental reviews and preliminary engineering for the SSX Project. Currently, there is no federal funding identified for final design or construction of the SSX Project. This letter confirms your organization as a SSX Project Section 106 consulting party.

MassDOT has provided your organization with all current, up-to-date project information in letters dated October 19 and December 1, 2016. The materials included FRA's SSX Project Conditional No Adverse Effect finding. One of the conditions is that conceptual designs and architectural drawings of the proposed improvements to the historic and expanded South Station headhouse and to the Fort Point Channel seawall will be provided to the Massachusetts Historical Commission (MHC) and consulting parties at the 30% and 60% design phases. The plans will be submitted to the MHC and consulting parties to confirm the design of these project elements is consistent with the SSX Project's established design principles and Secretary of the Interior's Standards for Rehabilitation regarding new construction. MassDOT, on behalf of FRA, will follow up with your organization to provide updated project information and to seek input when project plans are prepared.

This consultation process update is provided to assist FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

David J. Mohler
Executive Director
Office of Transportation Planning

Ten Park Plaza, Suite 4160, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
www.mass.gov/massdot

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

January 18, 2017

Greg Galer
Executive Director
Boston Preservation Alliance
The Otis House
141 Cambridge Street
Boston, MA 02114

Re: MassDOT South Station Expansion Project
Section 106 Consultation Update

Dear Mr. Galer:

The Massachusetts Department of Transportation (MassDOT), on behalf of the Federal Railroad Administration (FRA), appreciates your organization accepting the invitation to participate in the South Station Expansion (SSX) Project consultation process, in accordance with Section 106 of the National Historic Preservation Act, as amended. FRA is providing grant funding to MassDOT to complete state and federal environmental reviews and preliminary engineering for the SSX Project. Currently, there is no federal funding identified for final design or construction of the SSX Project. This letter confirms your organization as a SSX Project Section 106 consulting party.

MassDOT has provided your organization with all current, up-to-date project information in letters dated October 19 and December 1, 2016. The materials included FRA's SSX Project Conditional No Adverse Effect finding. One of the conditions is that conceptual designs and architectural drawings of the proposed improvements to the historic and expanded South Station headhouse and to the Fort Point Channel seawall will be provided to the Massachusetts Historical Commission (MHC) and consulting parties at the 30% and 60% design phases. The plans will be submitted to the MHC and consulting parties to confirm the design of these project elements is consistent with the SSX Project's established design principles and Secretary of the Interior's Standards for Rehabilitation regarding new construction. MassDOT, on behalf of FRA, will follow up with your organization to provide updated project information and to seek input when project plans are prepared.

This consultation process update is provided to assist FRA in meeting its obligations under Section 106 of the National Historic Preservation Act.

Sincerely yours,

David J. Mohler
Executive Director
Office of Transportation Planning

Ten Park Plaza, Suite 4160, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
www.mass.gov/massdot

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

1/30/2017

Brona Simon
State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

Re: South Station Expansion Project
Continuation of Section 106 Consultation
Finding of Conditional No Adverse Effect
MHC# RC.53253; EEA#15028

Dear Ms. Simon:

Thank you for your letter to the Federal Railroad Administration (FRA) dated December 20, 2016, regarding the Massachusetts Department of Transportation's (MassDOT) proposed South Station Expansion (SSX) Project. As you know, FRA is providing grant funding to MassDOT to complete state and federal environmental reviews and preliminary engineering for the SSX Project. Currently, there is no federal funding identified for final design or construction of the SSX Project. Your letter was a response to FRA's letter dated November 23, 2016, regarding FRA's proposed conditional No Adverse Effect finding for the project. FRA understands that the Massachusetts Historical Commission (MHC) is not currently able to concur with FRA's determination and has requested more information.

In particular, MHC requested information regarding the consultation that has occurred between FRA/MassDOT and the Section 106 consulting parties. Enclosed with this letter are copies of pertinent correspondence regarding the Section 106 consultation to date for the SSX project, which includes the following:

- Letters from MassDOT dated October 24, 2012, inviting the following parties to be a part of the Section 106 consultation process:
    - Wampanoag Tribe of Gay Head
    - Mashpee Wampanoag Tribe
    - Massachusetts Commission on Indian Affairs

- Letters from FRA dated October 19, 2016, inviting the following additional parties to be a part of the Section 106 consultation process:
    - Friends of Fort Point Channel
    - Amtrak
    - Boston Preservation Alliance
    - Boston Harbor Now
    - Fort Point Channel Landmark District Commission
    - Metropolitan Area Planning Council
    - Preservation Massachusetts
    - Save the Harbor Save the Bay
    - WalkBoston

- Letters from MassDOT dated October 28, 2016, reaffirming the invitation to the following parties to be a part of the Section 106 consultation process:
    - Wampanoag Tribe of Gay Head
    - Mashpee Wampanoag Tribe
    - Massachusetts Commission on Indian Affairs
    - Boston Landmarks Commission

- Letters from MassDOT dated December 1, 2016, that were sent with a CD with all relevant Section 106 documentation to the following parties:
    - Wampanoag Tribe of Gay Head
    - Mashpee Wampanoag Tribe
    - Massachusetts Commission on Indian Affairs
    - Boston Landmarks Commission
    - Friends of Fort Point Channel
    - Amtrak
    - Boston Preservation Alliance
    - Boston Harbor Now
    - Fort Point Channel Landmark District Commission
    - Metropolitan Area Planning Council
    - Preservation Massachusetts
    - Save the Harbor Save the Bay
    - WalkBoston

- Responses received to date by FRA and MassDOT from the following parties (copies of the responses are included with this submittal):
    - Amtrak – Amtrak accepted FRA's invitation to participate as a consulting party in a letter to FRA dated November 15, 2016. Amtrak's letter noted that based on the information provided in the invitation letter, "Amtrak has no objection with the conditional No Adverse Effect finding for the project." The letter goes on to request it be kept "informed on whether, and at what times, Amtrak and other consulting parties will be engaged for the design review process as the project progresses."
    - Boston Preservation Alliance (BPA) – BPA informed FRA in an email dated December 20, 2016, that "The Alliance would like to be a consulting party and have opportunity to comment on the project and its design as it develops."
    - Boston Harbor Now – Boston Harbor Now confirmed in an email to FRA dated November 7, 2016, that "Boston Harbor Now would be pleased to take part in Section 106 consulting party." No other comments were provided.
    - Mashpee Wampanoag Tribe (MWT) – The MWT Tribal Historic Preservation department issued a Section 106 Review Consultation Response Form dated December 15, 2016, responding that "We have no concerns related to the proposed project. MWT anticipates no adverse effects to our sites of cultural significance by you or your client." No further consultation with MWT is anticipated, unless archaeological resources or human remains are found during construction, in which case construction would be halted and the MWT office would be contacted, per the MWT condition included in the Section 106 Review Consultation Response Form.

FRA acknowledges that Amtrak, BPA, Boston Harbor Now, and MWT are consulting parties and recognizes that MWT has no concerns at this time related to the SSX Project. MassDOT recently followed up with Amtrak, BPA, and Boston Harbor Now in letters dated January 18, 2017, to confirm the participation of these parties in the Section 106 process for the SSX Project. The letters noted that there currently is no new project information, as the SSX Project is currently only funded at the level of preliminary engineering. The letters also confirmed that on behalf of FRA, MassDOT will submit project plans of the proposed improvements to the historic and expanded South Station headhouse and to the Fort Point Channel seawall to MHC, as well as the consulting parties (Amtrak, BPA, Boston Harbor Now) at the 30% and 60% design phases. The plans will be submitted for review to confirm the design of these project elements is consistent with the SSX Project's established design principles and Secretary of the Interior's Standards for Rehabilitation regarding new construction, in accordance with FRA's Conditional No Adverse effect finding. Copies of the January 18, 2017 letters are also enclosed.

Please let FRA know if you require any additional information regarding the Section 106 consultation that has occurred to date for the SSX Project. FRA and MassDOT hope this information is sufficient to assist you in concurring with FRA's Conditional No Adverse effect finding.

Sincerely,

1/30/2017

Michael Johnsen
Supervisory Environmental Protection Specialist
Environmental & Corridor Planning Division
Office of Railroad Policy and Development
Enclosures

cc: Amishi Castelli, FRA
Stephen Woelfel, MassDOT
Essek Petrie, HNTB

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

March 1, 2017

Laura Shick
Federal Preservation Officer
Federal Railroad Administration
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: South Station Expansion Project, Summer Street & Atlantic Avenue, Boston (Downtown), MA; MHC# RC.53253, **EEA# 15028**

Dear Ms. Shick:

Staff of the Massachusetts Historical Commission (MHC) have reviewed the information that was submitted, received at this office on February 1, 2017, for the project referenced above. The staff of the MHC have the following comments.

The MHC has reviewed the comments from Amtrak, Boston Preservation Alliance, Boston Harbor Now and the Mashpee Wampanoag Tribe that are part of the submission received. Most consulting parties have requested to participate in the design review process of the proposed new addition to the historic headhouse.

The Federal Railroad Administration's November 23, 2016 letter, received at this office November 28, 2016, requested a concurrence with a finding of "conditional no adverse effect." The conditions listed in that letter were as follows:

> "MassDOT will develop and implement a Construction Management Plan/Noise Control Plan to ensure construction noise is in compliance with Federal Transit Administration and City of Boston construction noise limits. Performance criteria will be developed for all noise-sensitive sites and a monitoring program will be followed throughout construction.
>
> "MassDOT will install a noise barrier along the easternmost track on the Dorchester Avenue side of Boston South Station to minimize or eliminate adverse noise impacts to properties to the east, including the Fort Point Channel Historic District. The USPS GMF currently serves an effective noise barrier; with the eventual removal of this building, a new noise barrier will need to be installed. Detailed information about the new noise barrier is available in the FEIR and forthcoming EA.
>
> "The Fort Point Channel east seawall will be raised 1.5 feet along an approximately 700-foot section of the east seawall along Dorchester Avenue to match the elevation of the adjacent east seawall to the north and south. The seawall will match the existing in material, size, color, texture, and configuration. The work will be undertaken in accordance with the SOI Standards for Rehabilitation.
>
> "MassDOT will design all new construction in accordance with the aforementioned Design Principles and the SOI Standards for Rehabilitation and guidelines for new construction. MassDOT will submit project plans to MHC for review at the 30% and 60% design phases. MassDOT will address any MHC concerns prior to finalization of the plans. Interested consulting parties will also be given the opportunity to review the 30% and 60% design plans."

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

The conditions as currently stated, do not take into consideration any comments that the consulting parties may have on the design of the new construction. The letters sent to the consulting parties by MassDOT, dated January 18, 2017, state:

> "One of the conditions is that conceptual designs and architectural drawings of the proposed improvements to the historic and expanded South Station headhouse and to the Fort Point Channel seawall will be provided to the Massachusetts Historical Commission (MHC) and consulting parties at the 30% and 60% design phases. The plans will be submitted to the MHC and consulting parties to confirm the design of these project elements is consistent with the SSX Project's established design principles and Secretary of the Interior's Standards for Rehabilitation regarding new construction. MassDOT, on behalf of FRA, will follow up with your organization to provide updated project information and to seek input when project plans are prepared."

The language in this letter conveys to the consulting parties that they will be able to comment on the design plans.

The MHC requests that the fourth condition be modified to include language that would allow the consulting parties to comment on the design plans along with MHC.

MHC looks forward to receiving your finding of "conditional no adverse effect" with updated conditions.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800), M.G.L. Chapter 9, Sections 26-27C (950 CMR 71.00) and MEPA (301 CMR 11). Please contact Jonathan K. Patton or Elizabeth Sherva of my staff if you have any questions.

Sincerely,

Brona Simon

Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc: Mary Beth Mello, Federal Transit Administration
Michelle Fishburne, Federal Railroad Administration
Matthew Ciborowski, MassDOT
Stephen Woelfel, MassDOT
Andrew Brennan, MBTA
Secretary Matthew Beaton, EEA/MEPA Unit
Boston Landmarks Commission
Greg Galer, Boston Preservation Alliance
Jill Valdes Horwood, Boston Harbor Now
Anthony DeDominicis, Amtrak
Johnette Davies, Amtrak

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

March 29, 2017

Brona Simon
State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

Re: South Station Expansion Project
Continuation of Section 106 Consultation
Finding of Conditional No Adverse Effect
MHC# RC.53253; EEA#15028

Dear Ms. Simon:

Thank you for your letter to the Federal Railroad Administration (FRA) dated March 1, 2017, regarding the Massachusetts Department of Transportation's (MassDOT) proposed South Station Expansion (SSX) Project. Your letter responded to FRA's letter dated January 30, 2017 regarding FRA's proposed Conditional No Adverse Effect finding for the SSX Project.

In FRA's November 23, 2016 letter to MHC, FRA made a *Conditional No Adverse Effect* finding, provided that MassDOT meet four conditions to eliminate potential adverse impacts of the SSX Project on historic architectural properties. In your most recent letter, you requested that FRA modify the fourth condition and resubmit an updated *Conditional No Adverse Effect* finding to MHC. FRA has modified the condition in accordance with MHC's request. The other three conditions, presented below, are unchanged from FRA's November 23, 2016 letter.

- MassDOT will develop and implement a Construction Management Plan/Noise Control Plan to ensure construction noise is in compliance with Federal Transit Administration and City of Boston construction noise limits. Performance criteria will be developed for all noise-sensitive sites and a monitoring program will be followed throughout construction.

- MassDOT will install a noise barrier along the easternmost track on the Dorchester Avenue side of Boston South Station to minimize or eliminate adverse noise impacts to properties to the east, including the Fort Point Channel Historic District. The USPS GMF currently serves as an effective noise barrier; with the eventual removal of this building, a new noise barrier will need to be installed. Detailed information about the new noise barrier is available in the FEIR and forthcoming EA.

- The Fort Point Channel east seawall will be raised 1.5 feet along an approximately 700-foot section of the east seawall along Dorchester Avenue to match the elevation of the adjacent east seawall to the north and south. The seawall will match the existing in material, size, color, texture, and configuration. The work will be undertaken in accordance with the Secretary of the Interior's Standards for Rehabilitation.

The fourth condition originally stated:

- MassDOT will design all new construction in accordance with the aforementioned Design Principles and the SOI Standards for Rehabilitation and guidelines for new construction. MassDOT will submit project plans to MHC for review at the 30% and 60% design phases. MassDOT will address any MHC concerns prior to finalization of the plans. Interested consulting parties will also be given the opportunity to review the 30% and 60% design plans.

MHC requested that FRA modify this condition to include language allowing the consulting parties to comment on the design plans along with MHC. Accordingly, FRA proposes that the condition now read:

- MassDOT will design all new construction in accordance with the aforementioned Design Principles for the project and the SOI Standards for Rehabilitation and guidelines for new construction. MassDOT will submit project plans to FRA, MHC, and the other consulting parties for review at the 30% and 60% design phases. If any consulting party provides substantive comments on the 30% and/or 60% design plans, MassDOT will respond in writing to the consulting party with an explanation of how its comments were considered or addressed. MassDOT will forward MHC any comments from consulting parties and MassDOT's responses to those comments. If any comments from FRA, MHC, or another consulting party lead to MassDOT making substantive changes to the design plans, MassDOT will inform all the parties of the changes and provide another opportunity for review. If necessary, MassDOT will schedule a meeting(s) with FRA, MHC, and the other consulting parties to resolve any outstanding concerns or objections. MassDOT will consider substantive input received from any consulting parties that choose to comment, and will address any MHC concerns prior to finalization of the plans.

FRA and MassDOT believe this modified fourth condition addresses your concerns and we hope MassDOT's commitment to adhering to all four conditions will allow you to concur with FRA's *Conditional No Adverse Effect* finding for the SSX Project. If you have additional questions or concerns, please contact me at (202) 366-0340 or laura.shick@dot.gov. FRA looks forward to a response within 30 days of MHC's receipt of this letter.

Sincerely,

Laura A. Shick

Laura Shick
Federal Preservation Officer
Environmental & Corridor Planning Division
Office of Railroad Policy and Development

CONCURRENCE. Brona Simon
5/9/17
BRONA SIMON RC.53253
STATE HISTORIC
PRESERVATION OFFICER
MASSACHUSETTS
HISTORICAL COMMISSION

cc: Amishi Castelli, FRA
Stephen Woelfel, MassDOT
Essek Petrie, HNTB

Mashpee Wampanoag Tribe
Section 106 Review
Consultation Response Form

Project Docket Number:	South Station Expansion Assessment
Consultant/Environmental Firm:	MassDOT/NEPA
Address or Location Description:	South Station
City, State:	Boston MA
Point of Contact	Stephen Woelfel

Response: May 25, 2017

☒ We have no concerns related to the proposed project. MWT anticipates no adverse effects to our sites of cultural significance, by you or your client.

☐ The MWT considers this project in compliance with the MWT's section 106 review process with agreed upon mitigations measures.

☐ This site will require the on-site presence of a Tribal Cultural Resource Monitor during ground disturbing activities. Contact the Compliance Review Supervisor with construction schedule.

☐ This project has the potential to have "adverse effects" to historic or cultural resources important to our tribe. We recommend the following actions:

This consultation process is in compliance to the National Historic Preservation Act of 1966 and all relevant amendments including but not limited to section 106 and 36 CFR 800.

Condition: In the case that unanticipated discoveries of archeological resources or human remains are found during construction, **you must immediately stop construction and notify our office.**

Ramona Peters, Compliance Review Supervisor
Tribal Historic Preservation Officer

Mashpee Wampanoag Indian Tribal Council
Historic Preservation Department
483 Great Neck Rd South, Mashpee, MA 02649 | Phone: 508-477-0208*101 | Email: 106review@mwtribe-nsn.gov

Appendix E – MEPA Review Certificates

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The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Deval L. Patrick
GOVERNOR

Timothy P. Murray
LIEUTENANT GOVERNOR

Richard K. Sullivan Jr.
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181
http://www.mass.gov/envir

April 19, 2013

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME	: South Station Expansion Project
PROJECT MUNICIPALITY	: Boston
PROJECT WATERSHED	: Boston Harbor
EEA NUMBER	: 15028
PROJECT PROPONENT	: Massachusetts Department of Transportation
DATE NOTICED IN MONITOR	: March 20, 2013

Pursuant to the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62I) and Section 11.03 of the MEPA Regulations (301 CMR 11.00), I hereby determine that this project **requires** the preparation of a mandatory Draft Environmental Impact Report (DEIR).

As described in the ENF, the project consists of an expansion of Boston's South Station by the Massachusetts Department of Transportation (MassDOT). The project is being undertaken to allow for expansion of intercity and high-speed rail (HSR) service into South Station and to improve existing rail operations and service delivery at South Station provided by the National Railroad Passenger Corporation (Amtrak) and the Massachusetts Bay Transportation Authority (MBTA). According to MassDOT, the importance of an expanded South Station has been extensively documented in State and regional transportation plans including MassDOT's *Massachusetts State Rail Plan* (2010) and *Massachusetts Freight Plan* (2010); the Boston Region Metropolitan Planning Organization's (MPO) *Paths to a Sustainable Region*, the long-range transportation plan for the metropolitan Boston region (2011); and the MBTA's *Program for Mass Transportation* (2009).

South Station is a critical node in both the Amtrak and MBTA rail systems (it is the sixth busiest station in the national Amtrak system and is Boston's busiest multimodal transit hub). It is the terminus of Amtrak's Northeast Corridor (NEC) service and Lake Shore Limited service from Chicago via Albany; approximately 1.36 million Amtrak passengers used South Station facilities in 2011. It also serves as the terminus for the western and southern lines of the MBTA's commuter rail system and provides connections to the MBTA's Red Line, Silver Line and local bus routes. In 2012, there were approximately 80,600 weekday inbound and outbound MBTA south side commuter rail boardings (including South Station and Back Bay station). South Station's bus terminal is also a hub for intercity, regional and local bus service with over 16,000 daily bus terminal passengers and nearly 28,000 additional weekday subway and bus transit passengers.

According to the ENF, the project is part of an overall plan to improve intercity and future HSR service in the NEC, as stated in Amtrak's *NEC Master Plan,* its *Vision for High Speed Rail in the Northeast Corridor*, and its 2012 update. Projections in the ENF indicate that HSR ridership on the Acela Express will be nine times higher by 2040 (increasing from 3.2 million riders to 29.7 million riders) and that ridership on MBTA commuter rail lines will grow by at least 28 percent by 2030. Amtrak's 2030 plans call for increased service between Boston and New York City and additional trains to operate over an "inland route" connecting Boston, Worcester, Springfield and New Haven. South Station presently operates with a total of thirteen tracks, all of which are fully utilized by Amtrak and the MBTA resulting in increasing congestion and declining service reliability.[1] Furthermore, presently there is insufficient vehicle layover space to meet existing and future South Station operational requirements. Amtrak and the MBTA currently store trains in the South Station terminal while waiting for slots at the existing south side layover yards. The project includes five primary elements:

- Expansion of the South Station terminal facilities by adding up to seven tracks and platforms, construction of an approximately 215,000 square foot (sf) passenger concourse, and reconstruction of the Cove, Broadway, and Tower 1 Interlockings at the terminal approach;
- Acquisition and demolition of the U.S. Postal Service (USPS) General Mail Facility located on Dorchester Avenue to provide a 16-acre site upon which to expand South Station and restore Dorchester Avenue for public and station access;
- Creation of an extension of the Harborwalk along a reopened Dorchester Avenue that will include pedestrian, bicycle, local transit, and vehicular improvements;
- Creation of possible future joint/private development adjacent to and/or over an expanded South Station;
- Construction of additional rail layover space to address existing and future Amtrak and MBTA service expansions and other planned improvements. Layover facilities are used to store, service, inspect, and maintain trains when they are not in service.

The approximately 49-acre South Station project site is bounded by Summer Street to the north, Dorchester Avenue and the Fort Point Channel to the east, Atlantic Avenue to the west,

[1] South Station currently has less than half the original track capacity that was available when the station was first opened in 1899.

and the MBTA's Cabot Yard to the south. The South Station project site also extends along a portion of the NEC Main Line to the west past the Cove Interlocking and along the MBTA's Fairmount/Old Colony Railroad Line to the south just past the Broadway Interlocking. South Station is located at the junction of several Boston neighborhoods including Chinatown, the Leather District, the Fort Point Channel, and the Seaport-Innovation District/South Boston Waterfront.

The project also includes the construction of layover facilities at one or more sites within the greater Boston area. After completion of a layover facility alternative analysis that evaluated 28 potential locations, three sites for new and/or expanded layover facilities were further considered as part of ENF. These potential layover locations include:

- The Boston Transportation Department (BTD)-owned Tow Lot located along Frontage Road approximately one track-mile from South Station;
- Beacon Yard Park, a freight yard and intermodal terminal most recently used by CSX Transportation, Inc. (CSX) located along Cambridge Street in the Allston section of Boston, approximately four track-miles on the MBTA Framingham/Worcester Line from South Station; and
- Readville Yard 2, an existing MBTA layover yard and maintenance facility located off Wolcott Court in the Hyde Park section of Boston, approximately nine track-miles from South Station.

MEPA Procedural History

The ENF was noticed in the March 20, 2013 Environmental Monitor, commencing the 20-day comment period. On April 1, 2013, a public MEPA Scoping Session was held at One South Station in compliance with 301 CMR 11.06(2). Portions of the project site have previously been subject to MEPA review as far back as 1973. As indicated in the ENF, projects previously filed on the South Station site include:

- EEA No. 243 – South Station Urban Renewal Project;
- EEA No. 2868 – South Station Project;
- EEA No. 3173 – Temporary South Station Bus Terminal;
- EEA No. 3205 – South Station Project;
- EEA No. 4049 – Tunnel Ventilation Program Phase 1;
- EEA No. 4327 – South Station Wye Connector;
- EEA No. 3205/9131 – South Station Air Rights Project; and
- EEA No. 10270 – North/South Rail Link Project.

Of these prior filings, only three projects required the preparation of an EIR. The South Station Air Rights Project (EEA Nos. 3205 and 9131) consists of a 1.765 million square foot mixed-use development located on the northern end of the site above existing portions of South Station headhouse and tracks. The project also includes a 70,000-sf horizontally expanded bus terminal, pedestrian connections from the train station concourse and platforms to the expanded bus terminal, and a 775-space three-level parking garage located above the bus terminal. The EIR complied with M.G.L. Chapter 30 and the Proponent recently filed a Notice of Project

Change (NPC) for an extension of time. The North/South Rail Link Project consists of a three-mile tunnel linking North and South Stations and associated rail infrastructure. The DEIR for this project was determined to adequately and properly comply with the MEPA Regulations in July 2003. A Final EIR has not been filed for this project. I have received numerous comments requesting that the scope of the South Station Expansion Project improvements include underground rail tracks and platforms for the North/South Rail Link Project. I cannot mandate the specific components of a project being forwarded by any proponent, public or private, as part of the MEPA review process.

Jurisdiction and Permitting

This project is subject to MEPA review and requires the preparation of a mandatory EIR because it requires State Agency Actions and exceeds several MEPA review thresholds including:

- Provided a Chapter 91 (c. 91) License is required, expansion of an existing non-water-dependent structure, provided the use or structure occupies one or more acres of (historic) tidelands;
- New discharge or expansion in discharge to a sewer system of 100,000 or more GPD (301 CMR 11.03(5)(b)(4(a));
- Generation of 3,000 or more unadjusted new additional daily trips on roadways providing access to a single location (301 CMR 11.03(6)(a)(6)); and
- Construction of 1,000 or more new parking spaces at a single location (301 CMR 11.03(6)(a)(7)).

The project requires several permits from the Massachusetts Department of Environmental Protection (MassDEP) including, but not limited to: a c.91 Waterways License and a Sewer Connection Permit (BRP WP 74). The project also requires an Amendment to the Fort Point Channel Downtown Waterfront Municipal Harbor Plan and a Public Benefit Determination issued by the Executive Office of Energy and Environmental Affairs (EEA), a Vehicular Access Permit from MassDOT, air-rights easements or approvals from the MBTA and State Register Review (950 CMR 71.00) and Section 106 Review (36 CFR 800) by the Massachusetts Historical Commission (MHC). An Order of Conditions will be required from the Boston Conservation Commission, or in the case of an appeal, a Superseding Order of Conditions from MassDEP. The project may also require an 8(m) permit from the Massachusetts Water Resources Authority (MWRA) for potential work at Beacon Park Yard. The project requires several federal permits/approvals including, but not limited to: approval under the National Environmental Policy Act (NEPA), Part 77 Airspace Review from the Federal Aviation Administration (FAA), Modification of High Occupancy Vehicle Designation review by the Federal Highway Administration (FHWA), Section 4(f) Review by the United States Department of Transportation (USDOT) and a National Pollutant Discharge Elimination System (NPDES) Construction General Permit from the United States Environmental Protection Agency (USEPA). The project is subject to the MEPA Greenhouse Gas (GHG) Emissions Policy and Protocol.

The project will receive Financial Assistance in the form of a funding from the Commonwealth and the Federal Railroad Administration (FRA). Therefore, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

Review of the ENF

The ENF submitted by MassDOT included a completed form, a project description, required plans and maps, the ENF distribution list, and the Layover Report. The ENF focused primarily on outlining the potential alternatives to be explored further as part of the DEIR process, consistency with local, regional and State policy and transportation plans, and potential impacts to wetland resource areas including filled tidelands. MassDOT acknowledged the need for significant amounts of additional environmental study in a variety of areas including transportation, air quality, noise and vibration, tidelands and wetlands impacts, historic resources, solid and hazardous waste, and GHG emissions.

Alternatives Analysis – South Station Terminal

As indicated in the ENF, MassDOT has yet to identify a preferred project alternative for either the South Station site or layover facilities; however, the ENF included schematic drawings and a general description of several alternatives for each scenario. For the South Station terminal four alternatives were identified:

- **No Build Alternative** – This alternative is the future baseline against which all the other project alternatives will be compared. This alternative assumes that the South Station complex, including the headhouse, track operations and the USPS General Mail Facility will all remain in their current condition. Dorchester Avenue would remain predominantly in private use by the USPS. This alternative also assumes the construction of the South Station Air Rights Project (EEA Nos. 3205/9131).
- **Alternative 1 - Transportation Improvements Only** – This alternative includes the previously approved South Station Air Rights Project and an expansion of South Station onto the adjacent USPS property. The USPS General Mail Facility would be demolished to make way for a 215,000-sf expansion of the existing 69,000-sf transit concourse and 126,000 sf of office space, for a total terminal size of 410,000 sf. Up to seven new tracks and platforms will be constructed along with the extension of some existing platforms to create a total of 20 tracks. Additionally, the Cove, Broadway and Tower 1 Interlockings at the terminal approach will be reconstructed. Dorchester Avenue would be restored for public and station access, reconnecting it to Summer Street as a public way with landscaping and improved pedestrian and cycling connections (sidewalks, crosswalks, and bike lanes). This restoration would also include construction of a long-awaited extension of the Harborwalk along a reopened Dorchester Avenue. The project would be constructed in accordance with c.91 standards for non-water-dependent infrastructure facilities and City of Boston zoning requirements. This alternative also includes the construction of additional layover facilities at one or more sites.

- **Alternative 2 - Joint/Private Development Minimum Build** – This alternative includes all the components from Alternative 1, plus provisions for future joint/private development of up to 850,000-sf of mixed-use space consisting of office, retail, residential and hotel uses, with building heights up to approximately 12 stories and up to 470 parking spaces. This alternative would be constructed in accordance with existing State and local regulations including existing c.91 regulations, the Fort Point Downtown Municipal Harbor Planning Area (the Municipal Harbor Plan (MHP)) requirements and the Massachusetts Coastal Zone Management (CZM) Program. This alternative also includes the construction of additional layover facilities at one or more sites.
- **Alternative 3 – Joint/Private Development Maximum Build** – This alternative includes all of the components from Alternative 1, plus provisions for future joint/private development of approximately 2.5 million sf of mixed-use development consisting of office, retail, residential and hotel uses, with building heights up to 26 stories and approximately 1,370 parking spaces. This alternative would be limited by the Federal Aviation Administration's (FAA's) maximum building height limits, pursuant to the Terminal Instrument Procedures (TERPS) regulations applicable to Boston Logan International Airport. These restrictions would limit building heights to approximately 290 feet and require an amendment to the Municipal Harbor Plan, modifying applicable c.91 regulations. This alternative also includes the construction of additional layover facilities at one or more sites.

Alternatives Analysis – Layover Facilities

The ENF also included a discussion of potential layover facility site alternatives. The ENF described layover facility needs and summarized the formal *Layover Facility Alternatives Report* (the Layover Report) prepared by MassDOT in March 2013. A complete copy of the Layover Report was included in an appendix to the ENF. As noted previously, current layover facility capacity deficiencies has led to sub-optimal operations and will likely not meet the needs of proposed future ridership on Amtrak and the MBTA. The Layover Report described existing conditions, including an inventory of the four existing Amtrak and MBTA layover areas and types of activities conducted at each. These existing facilities include:

- Amtrak's Southampton Street Yard – owned and operated by Amtrak, this 16-track facility is located north of Southampton Street, between the MBTA's Old Colony Main Line and the Dorchester Branch. This facility is the primary train storage and layover facility for Amtrak in Boston and the MBTA has an agreement with Amtrak to store train consists[2] here during daylight hours.
- Amtrak's Front Yard – owned by Amtrak, this five-track facility is located east of the Widett Circle Access Road and north of the Dorchester Branch between the Southampton Street Yard and the wet/dry loop tracks for the Amtrak train wash building. This yard is currently used for layover of MBTA commuter train consists on three of the tracks, while the remaining two tracks are used for Amtrak storage of on-track, non-revenue equipment and maintenance-of-way materials.

[2] A consist is a railroad term used to describe the physical makeup of a combination of locomotives and coaches coupled together and operating as one unit.

- MBTA's South Side Service and Inspection Facility – owned and operated by the MBTA, this facility consists of 57,000-sf of space in four buildings, including a two-track maintenance facility and two outdoor tracks used for locomotive fueling and servicing. The facility is located adjacent to Widett Circle, between South Station and Southampton Street Yard.
- MBTA's Readville Yard 2 – owned and operated by the MBTA, this 12-track facility includes a maintenance building and is the largest layover yard used by the MBTA for their south side service. The facility is located in the Hyde Park section of Boston adjacent to the MBTA Dorchester Branch.

The ENF summarized existing layover requirements for Amtrak during the midday and overnight. Amtrak's layover requirements include eight consists during the midday period and 13 consists overnight. According to the ENF, all of Amtrak's current layover needs are accommodated at Southampton Street Yard. The MBTA currently requires 38 consists to support its daily South Station commuter rail operations during a typical weekday. Of these 38 consists, 28 are in layover status during a typical midday period. The existing consists capacity at Southampton Street Yard (8), Front Yard (3), South Side (4) and Readville Yard 2 (10), leaves the MBTA with a midday shortfall of three consists. This results in restrictive scheduling of revenue and non-revenue trains in and out of South Station as well as the storage of trains by Amtrak and MBTA at the South Station Terminal while waiting for slots at the existing south side layover facilities.

The Layover Report summarized a series of assumptions that informed layover demand forecasts for Amtrak and the MBTA in the years 2025 and 2040. These assumptions include the usage of existing layover facilities, increased ridership demand, planned service increases in both frequency and routes, modifications to fleet vehicle mix (such as increased train length, bi-level coaches, and improved HSR service). The Layover Report concluded that in the year 2025 Amtrak will continue to be able to meet its overnight layover demands within its existing layover facilities. Specific details of Amtrak's 2040 layover needs and service and inspection requirements (including track length and support facilities) are not yet known, but it is assumed that Amtrak will need layover space beyond what is currently available. The Layover Report concluded that in the year 2025 the MBTA, with an increased fleet of 58 consists using South Station, the layover demand will increase to 43 consists. In 2025, it was assumed that layover capacity will increase to 37 consists, due to the use of a four-track layover yard on an MBTA easement at Beacon Yard, leaving the MBTA with a projected deficit of six layover slots. Layover capacity will be reduced to 30 consist spaces by 2040 due to an assumed increase in train consist length (requiring a minimum clear-track length of 760 feet apiece), precluding storage at the Front Yard facility and reducing capacity at Southhampton Street Yard. Combined with a projected increase in the number of consists to support MBTA service (66) and increased midday layover demand (49), the MBTA will have a predicted shortfall of 19 layover slots in 2040. As noted in the ENF, with anticipated increased service demands for both Amtrak and the MBTA, the lack of layover capacity will become a major constraint and limit the planned growth in rail service at South Station.

The Layover Report included a description of how potential layover sites were identified and a description of each alternative site. A total of 28 alternative sites were initially identified

based upon site criteria established by MassDOT deemed necessary to adequately support railroad operations at South Station. These criteria include: direct or nearly direct access to an existing rail line, adjacent uses compatible with the characteristics of a layover facility, avoiding adjacency with residences, if possible, site size and configuration suitable for the storage of eight car plus one locomotive consists, and proximity to South Station, favoring locations closer to South Station over those farther away. MassDOT then completed a two-tier screening assessment that included further analysis and conceptual design. The first tier screening process was used to identify "fatal flaws" based upon three key criteria including site suitability, railroad operations, and site access. At the conclusion of the first tier of screening, 18 of the 28 potential sites were eliminated from further review. The second tier screening process included the preparation of a conceptual plan for each location and a more detailed comparison of candidate sites based on factors such as: consistency with zoning, distance from South Station, site topography, environmental impacts, layover yard and main line operations, and capital improvement requirements. The Layover Report described how each remaining potential layover facility site met or conflicted with the evaluation criteria and recommended various alternatives for dismissal or continued consideration.

As noted previously, MassDOT proposed three potential layover facilities for further consideration and examination as part of the DEIR. The Beacon Park Yard conceptual layover design would provide tracks parallel to the MBTA Framingham/Worcester Line to store up to 30 consists. Expansion at this site would require a renegotiation of MassDOT's option agreement with Harvard University on a 132-foot wide area immediately north of the existing MBTA easement area at Beacon Park Yard to establish rights not conveyed as part of the current option. The BTD Tow Lot conceptual layover design would provide tracks capable of storing up to 10 consists, but would require acquisition of three full parcels and a portion of an additional parcel from the City of Boston and an easement from Amtrak. The BTD Tow Lot site would require a rail connection to be made to the MBTA's Dorchester Branch, but given its close distance to South Station impacts to the Main Line would be reduced compared to other potential layover sites. Finally, a conceptual layover facility expansion at Readville Yard 2 would create a total storage capacity for up to 18 consists with rail access via the existing yard lead connection to the MBTA Dorchester Branch at Dana Interlocking. Travel distance to South Station is the longest (8.8 miles) of the three potential layover sites proposed for further evaluation.

Notably, the Layover Report concluded that no single remaining layover facility alternative has the physical space to fulfill the entire projected 2040 layover need. The Layover Report also determined that layover of too many trainsets approaching South Station from one location could cause conflicting railroad operations and create a bottleneck. As outlined in the scope below, MassDOT will be required to evaluate a combination of the three recommended sites to assess how they can be integrated with the existing four layover sites serving South Station.

Potential environmental impacts associated with the South Station terminal project were presented as a "worst-case" scenario (e.g., Alternative 3, the Joint/Private Development Maximum Build alternative) in the ENF. A maximum build out development would increase building square footage on-site from 1,660,000 sf to 2,975,000 sf, an increase of 1,315,000 sf. Impervious areas would remain the same at 46.5 acres of the 49-acre project site. The project

would add a total of 750 housing units and increase the maximum building height by 185 feet to a 290-foot maximum. Average vehicle trips per day are predicted to increase from 5,400 trips to 9,900 trips; a creation of 4,500 new vehicle trips per day. The project would also add 1,128 new parking spaces for a site total of 1,593 parking spaces. Wastewater generation and water use would each increase by 567,000 gallons per day (gpd) for a project total of 598,000 gpd each. The South Station site includes the South Station Headhouse and Waiting Room, both of which are listed in the State and National Registers of Historic Places.

The ENF also included a description of potential environmental impacts associated with the conceptual plans prepared for the three proposed layover facilities. This included an estimate of land alteration (either additional or removal of buildings, internal roadways, parking/paved areas, or other altered areas), wetland resource area impacts (i.e., the types of resources that may be impacted either permanently or temporarily with no areas/volumes provided), and regulatory status in accordance with the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000).

A portion of the South Station terminal site is located within the Fort Point Downtown Waterfront Municipal Harbor Planning Area, for which Phase 1 and Phase 2 MHPs have been approved (March 8, 2004). These MHPs establish the planning area boundaries and outline planning principles for the Fort Point Downtown Waterfront Municipal Harbor Planning Area. The South Station terminal site contains filled former tidelands that are subject to c.91 under the authority of numerous historic licenses (310 CMR 9.00). Approximately 47 acres of the 49-acre project site include jurisdictional filled or flowed tidelands. The proposed project includes four acres dedicated to water-dependent uses, while the remaining 43 acres will be occupied by non-water-dependent uses. The ENF included a summary of these existing licenses, their date of issuance (between 1897 and 1997), and the scope of work authorized. The BTD Tow Lot and Beacon Park Yard layover sites each contain filled tidelands, but according to the ENF, the tidelands are geographically isolated from existing flowed tideland and meet the statutory definition of landlocked tidelands.

The ENF identified project components that are listed either on the State or National Registers of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth. The South Station site includes the South Station Head House (BOS.1517) which is listed in the State and National Registers of Historic Places (the Registers). The South Station site is located adjacent to the Leather District Historic District (BOS.AP) and the Fort Point Channel Historic District (BOS.CX), also listed in the Registers. The USPS General Mail Facility/South Postal Annex is included in the Inventory of Historic and Archaeological Assets of the Commonwealth (the Inventory). The BTD Tow Lot, Beacon Park Yard and Readville Yard 2 potential layover sites do not contain historic buildings or structures listed in the Registers or Inventory. The ENF included a list of historic resources listed on the Registers or Inventory within the vicinity of South Station or the three proposed layover facility locations.

SCOPE

General

The DEIR should follow Section 11.07 of the MEPA regulations for outline and content, as modified by this scope.

Project Description and Permitting

The DEIR should include a detailed description of the proposed project and describe any changes to the project since the filing of the ENF. The DEIR should include updated site plans for existing and post-development conditions for each potential project alternative at a legible scale. For the South Station terminal site, these conceptual plans should clearly identify vehicle access points, pedestrian corridors and access points, wetland resource areas and c.91 jurisdictional limits, the type and location of vehicle and bicycle parking (including shared bicycle infrastructure), and stormwater, wastewater and water supply infrastructure. The DEIR should describe how the proposed development scenarios and expanded station operations will be integrated into the existing South Station building and platforms, including connections to other modes of transit (e.g., private and MBTA buses, Red Line and Silver Line) and Main Line commuter rail operations. For the potential layover facilities, these conceptual plans should clearly identify proposed track placement, the types of support buildings or structures proposed, adjacent land uses, existing on-site infrastructure (i.e., existing rail-yard operations, etc.) stormwater management infrastructure, and vehicle access points. The DEIR should identify the types of signal, track (new sidings or double tracking to increase capacity) or interlocking upgrades proposed as part of the project and include their location on the project's site plans.

The DEIR should include a discussion of future permitting requirements associated with the project, identifying permitting requirements specific to each identified development scenario and layover facility location. Additionally, while this project is not subject to the EEA Environmental Justice (EJ) Policy, MassDOT has committed to evaluate the project for potential impacts to EJ communities based on federal and State guidelines. The effects of the project alternatives on EJ populations will be evaluated relative to their overall effects to determine whether impacts in the No Build and Build conditions will be disproportionate or adverse on EJ communities or populations.

Alternatives Analysis

The ENF noted that MassDOT has not currently identified a preferred alternative for the project. The DEIR should include an expanded alternative analysis that builds off the preliminary data presented in the ENF and provide additional description and data outlining the potential environmental impacts associated with each development scenario and layover facility.

Specifically, the DEIR should provide an alternatives analysis that provides conceptual site layout plans, a summary of potential environmental impacts associated with each of these alternatives, preferably in tabular format, and a supporting narrative for each of the following alternatives for the South Station Site:

- A No Build Alternative;
- Alternative 1 – Transportation Improvements Only;
- Alternative 2 – Joint/Private Development Minimum Build; and
- Alternative 3 – Joint/Private Development Maximum Build.

The DEIR should also include an alternative analysis that evaluates the following potential layover facility locations (providing refined conceptual plans, a summary of potential environmental impacts and a supporting narrative identifying the types of activities to be conducted on-site):

- BTD Tow Lot;
- Beacon Park Yard;
- Readville Yard 2; and
- Widett Circle

This layover facility alternatives analysis should consider how each potential facility will operate and meet expected operational needs either individually or in conjunction with other proposed facilities once integrated into the larger rail system (Amtrak, MBTA, freight) that connects to South Station. The DEIR should specifically address how the location and operations at any of the potential layover facility sites will impact Main Line services for Amtrak, the MBTA and freight services due to necessary train dead-heading and midday storage requirements. The DEIR should include a phasing plan that addresses sequencing and timing of the potential layover facility sites based on operational need.

As part of the DEIR, I encourage MassDOT to consider additional ways to reduce impacts to environmental resources through design modification or the addition of features to further mitigate potential impacts. Additional recommendations provided in this Certificate may result in a modified design that enhances the project's ability to avoid, minimize, or mitigate Damage to the Environment. The DEIR should discuss steps MassDOT has taken to further reduce the impacts of the project since the filing of the ENF, or, if certain measures are infeasible, the DEIR should discuss why these measures will not be adopted.

Land Impacts

The DEIR should include a description of how the South Station terminal site and the potential layover facility sites will alter existing land uses or require the relocation of existing uses. The ENF acknowledged that all development alternatives at South Station will require the demolition of the USPS General Mail Facility. The relocation of this facility, if pursued by the USPS, may be subject to separate MEPA review contingent upon the characteristics and location of a new facility. Since the South Station site is a predominantly altered area, direct land impacts are anticipated to be limited. However, the DEIR, as discussed later in this scope, should describe the project's potential impacts to jurisdictional tidelands and their associated public benefit requirements, as well as expected public realm improvements along Dorchester Avenue. The DEIR should discuss any potential easements or impacts to Article 97 land that may encumber the proposed project areas within the vicinity of South Station.

More notably, land impacts associated with the proposed layover facilities appear to have the potential to result in more substantial impacts. The DEIR should identify the location of known easements, either existing or required for project completion, and how the terms of these easements may impact project operations and the ability to construct suitable layover facilities. The DEIR should also discuss how each layover alternative will impact existing uses within the site, as applicable. In particular, the DEIR should focus on the potential current and future impacts to the Boston Department of Public Works (DPW) facility in the BTD Tow Lot layover facility alternative, impacts to existing commercial facilities in the Widett Circle layover facility alternative, and vested rights to CSX and Harvard University at the Beacon Park Yard site. MassDOT should work with the Boston DPW and City officials to assess the impacts of using the BTD Tow Lot for layover purposes on Boston DPW operations and supporting uses and present these findings in the DEIR. The DEIR should respond to Harvard University's comments regarding the layover facility analysis presented in the ENF and existing rights afforded to the MBTA, MassDOT, CSX or Harvard University. Additionally, the DEIR should evaluate the use of each layover site with consideration for how they may preclude reasonably anticipated future projects by MassDOT (highway or commuter rail service), anticipated future Amtrak service, projects identified in State and local planning documents, or development rights vested to Harvard University

Wetlands, Waterways and Tidelands

The South Station terminal is located near wetland resource areas regulated under the Massachusetts Wetlands Protection Act (WPA). The DEIR should confirm the presence of either Land Subject to Coastal Storm Flowage (LSCSF) or 100-foot buffer zone to Coastal Bank, characterize these wetland resource areas and estimate potential temporary or permanent impacts associated with construction of each project alternative. A similar assessment should be performed for each potential layover facility location, identifying regulated wetland resource areas and potential impacts. The DEIR should describe how each project element will be designed and constructed in a manner consistent with relevant performance standards established in the WPA Regulations (310 CMR 10.00). The project will require a Federal Consistency Certification because the project will receive funding from the FRA. The DEIR should include an assessment of how the project will be designed and implemented in a manner consistent with CZM policies.

The DEIR should include graphics that overlay key c.91 jurisdictional criteria (e.g., Historic Mean High and Mean Low Water Marks, Ordinary High Water Marks, filled tidelands, landlocked tidelands, etc.) on top of the South Station Terminal and potential layover facility conceptual plans. The DEIR should include information demonstrating how each project alternative will be designed to meet the c.91 licensing criteria for a non-water-dependent (transportation improvements, joint/private development) and water-dependent (Harborwalk extension) uses. The DEIR should include conceptual design plans, graphics and a supporting narrative that details the location of uses within the building on tidelands, facilities dedicated for public use, and proposed building heights for each development and layover alternative. For each of these scenarios the DEIR should also describe how the project will: maintain a capacity for water-dependent uses, meet shoreline utilization requirements, activate Commonwealth

Tidelands for public use, and comply with standards for non-water-dependent infrastructure facilities. The DEIR should identify areas on or adjacent to the project site that have existing c.91 Licenses and identify site attributes approved in conjunction with those historic licenses. I strongly encourage MassDOT to meet with the MassDEP Waterways program prior to preparing the DEIR to ensure that sufficient information is provided in the DEIR to assist MassDEP in providing meaningful comments on the project's ability to meet c.91 licensing standards.

According to the CZM comment letter, the 2004 Secretary's Decision on Phase 2 of the MHP (the Phase 2 Decision) anticipated an amendment of the MHP to provide for track expansion and additional development at the USPS site. The Phase 2 Decision included specific guidance requiring a comprehensive master planning effort for the area south of Summer Street prior to submitting an MHP Amendment. The master planning effort and MHP Amendment should draw from the Boston Redevelopment Authority's (BRA) Watersheet Activation Plan for the Fort Point Channel area for a list of potential public benefits for development projects along the Fort Point Channel. As noted by CZM, following this comprehensive planning process, an MHP Amendment that implements the planning vision for the area can be submitted to the Secretary for review according to the procedures outlined in 301 CMR 23.06. MassDOT should work with the City of Boston and CZM to determine how to meet the requirements set forth in the Phase 2 Decision and successfully amend the MHP. I strongly encourage MassDOT to work collaboratively with the City of Boston to expedite the commencement of the Phase 2 Decision master planning process. The DEIR should report on the status of the master planning process required in the Phase 2 Decision, providing details on the plan components, public outreach efforts or other plan aspects, as available. The DEIR should include a summary of historic master planning efforts and describe the geographic location and terms of the Phase 1 and Phase 2 MHPs for contextual purposes.

The DEIR should include the results of the potential impacts to the public realm from wind and shadow associated with the proposed development alternatives at the South Station terminal site. As committed to by MassDOT in the ENF, the DEIR should include the results of a quantitative wind analysis, including wind tunnel testing to assess potential ground-level impacts to the pedestrian environment. This analysis should focus on potential wind impacts to new and existing open spaces, including the pedestrian environment around the South Station terminal, the proposed Harborwalk extension along the Fort Point Channel, and other areas of the public realm. The DEIR should also include a shadow impact analysis, performed to meet the standards required as part of the c.91 License review process, for each development alternative (including the Transportation Only Improvements).

The project is a critical piece of infrastructure not only for the City of Boston and the surrounding region, but is key to the operation of the NEC. As a coastal city, the project has an increased susceptibility to potential damage associated with the affects of climate change, most notably sea-level rise and flooding impacts due to increase storm frequency and intensity. The DEIR should discuss how the proposed project (South Station terminal and potential layover facilities) will be designed, constructed and operated to reduce or avoid the risk of damage associated with these types of events. MassDOT should assess the potential impact of sea level rise and flooding (within the reasonable life span of the project) on public spaces, water and wastewater infrastructure, stormwater management, track elevations and passenger platforms,

track switching equipment, and other critical project elements. The CZM comment letter includes recommended sea-level rise scenarios that MassDOT should use when conducting this assessment and to assist in the selection of appropriate mitigation or adaptation strategies to make the project more flood-resistant or flood-resilient. At a minimum, CZM has recommended that MassDOT evaluate impacts of two feet of sea level rise. This assessment may also draw from data included in the Federal Emergency Management Agency's (FEMA's) update to the Suffolk County flood insurance study or available updated data regarding rainfall events. The DEIR should consider climate change adaptation strategies presented in the Massachusetts *Climate Change Adaptation Report* (2011), The Boston Harbor Association's *Preparing for the Rising Tide,* or other publications issued by U.S. EPA or the National Oceanographic and Atmospheric Administration (NOAA).

The DEIR should include a discussion of how the project complies with the Public Benefit Determination (301 CMR 13.00) criteria established for non-water-dependent projects located completely or partially within tidelands or landlocked tidelands. Specifically, the DEIR should include a discussion of: the purpose and effect of the project, impact of the project on abutters and the surrounding community, enhancement to the property, benefits to the public trust rights in tidelands, benefits provided through previously obtained municipal permits, community activities on the South Station site, environmental protection and preservation, and public health, safety, and general welfare. At the conclusion of the MEPA process (i.e., in conjunction with a Final EIR, or a Supplemental FEIR if required, I will issue a Public Benefit Determination in compliance with the provisions of *An Act Relative to Licensing Requirements for Certain Tidelands* (2007 Mass. Acts ch. 168, sec.8).

Stormwater

The DEIR should discuss how development of the South Station terminal (including the reopening of Dorchester Avenue) as well as each layover facility site will be designed in compliance with MassDEP Stormwater Management Regulations and its associated Stormwater Policy, as applicable. The DEIR should include a conceptual discussion of proposed BMPs that may be selected in the final design phase. MassDOT should demonstrate in the DEIR that the South Station terminal and potential layover facility conceptual designs include sufficient measures capable of conveying and treating estimated stormwater flows generated by the project, including a discussion of existing stormwater infrastructure, outfall locations, and connections to infrastructure susceptible to combined sewer overflows (CSOs). The stormwater analysis should evaluate and compare storm-event peak flow rates and volumes to existing conditions based upon conceptual designs for South Station and layover facilities. If groundwater recharge is required or proposed, the DEIR should demonstrate that sufficient area exists on-site to accommodate necessary recharge areas. The DEIR should include a discussion of low impact design (LID) stormwater management techniques to be incorporated at the South Station or layover facility sites.

The DEIR should identify and describe the location of existing storm drain systems that will receive stormwater flows generated by the project (both South Station terminal and layover sites). The DEIR should describe existing connections of stormwater flows to sanitary or combined sewers that will be removed in conjunction with the project and how flows from these

removed connections will be redirected to the storm drain system and associated discharge points (Fort Point Channel or otherwise). The DEIR should discuss BMPs to be implemented within the proposed parking areas to manage and treat stormwater discharges.

Water Supply and Wastewater

The DEIR should provide an estimate of wastewater generation and water usage, tabulated by use (residential, commercial, irrigation, air conditioning make-up) and location. The DEIR should clearly state assumptions used to generate these estimates. The DEIR should clarify if the proposed layover facilities will utilize water for rail car or equipment washing or for repair and maintenance activities. The DEIR should confirm the availability of sufficient water and sewer conveyance capacity for each of the project alternatives and identify if new water or sewer mains will be necessary to construct the project's various components. I encourage MassDOT's plans for exterior spaces around the expanded South Station and Dorchester Avenue to include provisions for a variety of drought-tolerant, native species to limit or eliminate project demand for irrigation.

The DEIR should include a description and supporting graphic characterizing the existing wastewater system associated with the South Station terminal and the potential layover sites from the the point of origin to the point of treatment and/or discharge. The DEIR should clarify what infrastructure is solely for sanitary purposes and what infrastructure conveys combined flows (sanitary and stormwater). As noted by the MWRA, particularly in the area near South Station, the configuration and performance of the network of sanitary, combined sewers, and combined sewer outfalls, including the frequency and volume of CSO discharges at each outfall are the subjects of Federal District Court mandates, NPDES permits issued to the Boston Water and Sewer Commission (BWSC) and MWRA, and regulatory performance standards. The DEIR should demonstrate that any proposed changes to the physical configuration, location, and/or hydraulic performance of these sewers and outfalls will not affect compliance with Federal Court mandates and regulatory requirements, as well as water quality conditions in Fort Point Channel. The DEIR must also demonstrate that the project will not compromise MWRA's or BWSC's ability to attain required long-term levels of CSO control. MassDOT should coordinate with the MWRA and the BSWC to ensure that conceptual and final design plans are consistent with applicable requirements and maximize potential benefits to the wastewater system at large. The BWSC comment letter indicates that a plan to improve a CSO outfall pipe (BOS 065) which runs under the USPS building. MassDOT should consider these improvements in its design plans and coordinate with BWSC as necessary to facilitate its construction.

MassDOT will be required to offset any increases in project-related wastewater flow with stormwater inflow reduction, infiltration (groundwater) or sewer separation in hydraulically related sewer systems. The DEIR should discuss how the project will comply with MassDEP's Policy on Managing Infiltration and Inflow in MWRA Community Sewer Systems (BRP 09-01) and with BWSC policy and regulations.

Traffic and Transportation

The DEIR should include a Traffic Impact and Access Study (TIAS) prepared in accordance with EEA/MassDOT Guidelines for EIR/EIS Traffic Impact Assessments. As noted in the ENF, this TIAS will examine existing and future 2040 No Build and Build alternative transportation conditions. The TIAS should also to include an interim 2025 traffic assessment to align traffic and transportation estimates with those generated by Amtrak and MBTA as part of their planning studies forecasting layover requirements and ridership using South Station. The TIAS should use data and methodologies provided through collaborative efforts with the Boston Transportation Department (BTD) and Central Transportation Planning Staff (CTPS) to identify study area intersections, mode-split data, and data forecasting. The TIAS should discuss existing and proposed traffic volumes and conditions, anticipated trip generation rates across all modes (vehicles, pedestrians, transit, etc.), crash rate data, level-of-service (LOS) operations at signalized and unsignalized intersections, estimated parking demand, and proposed access points and loading operations for the South Station site.

The DEIR should describe anticipated modifications to the existing roadway network, including physical modifications to the State Highway Layout and South Station Bus Terminal ramps, to implement each alternative at South Station or the potential layover facilities. The DEIR should include conceptual drawings depicting these required modifications to demonstrate their feasibility and overall integration into the roadway network and any traffic-related mitigation measures proposed by MassDOT. The DEIR should also identify any proposed modifications to bus terminal access by either private carriers or MBTA buses for each development alternative. The DEIR should describe any proposed "kiss-and-ride", shuttle bus, or taxi stand accommodations around the perimeter of South Station and how these areas will be accessed and designed to avoid conflict with bus operations, pedestrians and bicyclists. Finally, the DEIR should confirm that sufficient location exists for expanded Hubway facilities at the South Station terminal site under each development scenario.

The DEIR should evaluate and describe how reopening Dorchester Avenue to public access will potentially impact various modes of transit, including private vehicle, truck and bus traffic, pedestrians, and bicycles. The DEIR should describe how a reopened Dorchester Avenue may be used to reroute MBTA buses to provide more direct bus connections to downtown. The DEIR should include a refined conceptual plan that depicts the extent and types of proposed improvements to Dorchester Avenue, proposed connections to the Harborwalk, and broader pedestrian and bicycle connections through and around South Station to the adjacent neighborhoods (i.e., Fort Point Channel, Seaport District, South Boston, Chinatown, Leather District, etc.). These connections are critical to enhancing South Station's operations as a multi-modal transit facility as well as integrating public improvement areas into the broader urban fabric of downtown Boston and connections to the waterfront. The conceptual design for Dorchester Avenue (or any other street improvements) should comply with the City of Boston's Complete Street Initiative, which requires the incorporation of "green infrastructure" into street designs.

As noted in several comment letters, expansion of rail services at South Station will lead to increased ridership on other modes of transit service that use South Station. The DEIR should

include an analysis of how the predicted increases in rail ridership and changes to operations will impact existing and future capacity on MBTA subway and bus routes. The DEIR should also evaluate how ridership increases will affect station (entrances and exits, escalators, interior waiting areas, etc.) and platform capacities for MBTA operations both within South Station and at key stations within the downtown core of the MBTA subway system (i.e., Park Street, Downtown Crossing, State Street and Government Center). MassDOT should consider the comments received from WalkBoston with design recommendations to accommodate increased pedestrian volumes within and around South Station when advancing design plans. The DEIR should discuss the current planning (State and federal) and funding status for the North/South Rail Link project. The DEIR should describe how the proposed South Station Expansion Project will be designed to not preclude future construction of the North/South Rail Link project.

The DEIR should confirm that additional traffic associated with potential layover facilities will be negligible in volume. While traffic volumes may be limited, the DEIR should describe how vehicle access will be made to each potential layover site and if new driveways will be required to facilitate access.

I anticipate that MassDOT will be required to enter into a Transportation and Access Plan Agreement (TAPA) with the City of Boston which will outline the proposed traffic and transportation mitigation measures associated with the project contingent upon which development scenario is advanced. Furthermore, the project will likely require a Highway Access Permit from MassDOT – Highway Division and therefore associated Section 61 Findings will identify additional requirements related to traffic-related project mitigation requirements. The DEIR should include proposed traffic mitigation measures to offset unavoidable impacts associated with the project including, but not limited to, intersection improvements, pedestrian and bicycle facilities upgrades, and implementation of a Transportation Demand Management (TDM) program. As recommended by MassDEP, the DEIR should describe all reasonable opportunities for trip reduction and management tailored to the specific needs of employees and patrons with particular emphasis on transit connections and pedestrian and bicycle infrastructure amenities. MassDOT should review the recommended TDM measures presented in the MassDEP comment letter and explain which measures are proposed for adoption in conjunction with the project, or if recommendations are infeasible, explain their reason for dismissal from consideration.

The DEIR should provide additional analysis justifying the number of proposed parking spaces for each development alternative at South Station. MassDOT must demonstrate in the DEIR that the number of parking spaces have been reduced to the maximum extent practicable based upon estimated demand. The DEIR should describe how an effective parking management plan, shared parking, or fee-structures may be used to achieve this reduction in structured parking.

Air Quality

The DEIR should include the results of a noise and vibration impact analysis performed in accordance with the Federal Transit Administration (FTA) Guidance Manual for both the South Station site and the proposed layover facility locations. MassDOT will conduct a noise

and vibration monitoring program to establish ambient background noise levels within the South Station project area and proposed layover facility locations to develop the project criteria noise limits using FTA guidelines. The DEIR should present the results of the noise and vibration modeling for each design year build alternative and propose abatement measures to mitigate anticipated noise or vibration impacts that may exceed the FTA or other applicable criteria. The project must comply with applicable anti-idling regulations. Additionally, the MBTA should implement noise and operational best management practices (BMPs) equal to or more stringent than those currently utilized at other layover facilities along the commuter rail. The MBTA should ensure that a forum for citizen complaint is implemented as a BMP in the operational plan for any proposed layover facility and at South Station. I expect that the MBTA will provide documentation of these BMPs, and contractual obligations associated with the operator of the railroad in the DEIR. Specific consideration should be given to the hours of operation at each layover facility, potential idling times of locomotives and proximity to sensitive receptors. The DEIR should include a feasibility assessment of potential mitigation measures, a phasing plan for their implementation, and identification of responsible parties for their construction and maintenance. The DEIR should include a discussion of locomotive technologies, including the potential upgrades of either Amtrak or MBTA equipment (including MBTA's bus fleet that operate via South Station) within the project's design year that may provide additional air quality benefits to the region or layover and station facilities on a localized level. This discussion should also include the electrification of rail lines and the use of plug-in facilities at layover yards and the potential air quality benefits thereof.

The DEIR should include an air quality analysis consisting of a regional emissions inventory for criteria pollutants (volatile organic compounds (VOCs), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), and particulate matter ($PM_{10}/PM_{2.5}$). These emissions inventories should include daily and annual emissions from the diesel locomotives and motor vehicles on roadways in the air quality study area for the existing and 2040 No Build, Build, and Build with Mitigation alternatives. Similar to the traffic studies, the air quality study should include an interim year analysis of 2025 to correspond with ridership data. MassDOT should work with MassDEP prior to the preparation of the DEIR to establish the appropriate extent of the study area and modeling methodology. I encourage MassDOT to expand the pollutants analyzed to include air toxics, diesel PM and ultrafine particulates.

The DEIR should also include a localized microscale assessment of CO hotspot, or intersection analysis, using the U.S EPA's CAL3QHC model for South Station Terminal and the four potential layover sites. MassDOT indicates that the South Station project is of "local air quality concern" and will therefore conduct a PM quantitative hotspot analysis as part of the DEIR using the U.S. EPA's December 2010 guidelines to assess emissions from diesel trains and motor vehicles within the study area. The DEIR should discuss measures to limit vehicle idling time in compliance with the Massachusetts Idling regulation (310 CMR 7.11). The DEIR should discuss possible mitigation measures to offset potential air quality impacts pending the results of the air quality analysis.

Greenhouse Gas Emissions

The DEIR should include a GHG analysis prepared in compliance with the MEPA Greenhouse Gas Policy and Protocol ("the Policy"). The Policy requires projects to quantify carbon dioxide (CO_2) emissions and identify measures to avoid, minimize or mitigate such emissions. The analysis quantifies the direct and indirect CO_2 emissions associated with the project's energy use (stationary sources) and transportation-related emissions (mobile sources). Since MassDOT has not selected a preferred joint/private-build or layover facility alternative, the DEIR should assess GHG emissions associated with each alternative to allow for a comparison of potential GHG impacts. The GHG analysis should evaluate CO_2 emissions for two scenarios as required by the Policy including 1) a Base Case and 2) a Build with Improvements Condition. In the case of the joint/private-build alternatives, the Build with Improvements alternative should include energy efficiency design measures in order to meet the Stretch Energy Code (Stretch Code), while the Base Case should be consistent with the applicable State Building Code in effect at the time the ENF was filed.[3] MassDOT should meet with staff from the MEPA office, the Department of Energy Resources (DOER) and MassDEP prior to performing the GHG analysis to confirm modeling assumptions and methodology.

The City of Boston has adopted the Stretch Code subsequent to its designation as a Green Community under the provisions of the *Green Communities Act of 2008*. Therefore, the project will be required to meet the applicable version of the Stretch Code in effect at the time of construction. The Stretch Code increases the energy efficiency code requirements for new construction (both residential and commercial) and for major residential renovations or additions in municipalities that adopt it. Projects may meet the Stretch Code requirement of 20-percent better energy efficiency than the State's base energy code by either meeting the standard of 20-percent better than ASHRAE 90.1-2007, or by using a prescriptive energy code. The DEIR should demonstrate that the project can be designed to meet the Stretch Code requirements. As applicable, project elements will also be required to be Leadership in Energy and Environmental Design (LEED) certifiable in accordance with Article 37 of the Boston Zoning Code.

Direct stationary source CO_2 emissions include those emissions from the facility itself, such as boilers, heaters, and internal combustion engines. Indirect stationary source CO_2 emissions are derived from the consumption of electricity, heat or other cooling from off-site sources, such as electrical utility or district heating and cooling systems. Mobile CO_2 emissions include those emissions associated with vehicle use by employees, vendors, customers and others, and in the case of this project, diesel trains. The Policy requires proponents to use energy modeling software to quantify projected energy usage from stationary sources and energy consumption and mobile source modeling software to predict transportation-related emissions. The DEIR should clearly state the types of modeling software used and emissions factors applied to GHG calculations.

The GHG analysis should clearly demonstrate consistency with the objectives of MEPA review, one of which is to document the means by which MassDOT plans to avoid, minimize, or mitigate Damage to the Environment to the maximum extent feasible. The DEIR should state

[3] I note that the Massachusetts State Building Code is slated for revision in mid-2013. I strongly encourage MassDOT to use the updated code when preparing the GHG analysis.

modeling assumptions and explicitly note which GHG reduction measures have been modeled and those that cannot be modeled due to the constraints of the modeling software. The DEIR should include the modeling printout for each alternative and emission tables that compare Base Case emissions in tons with the Build with Improvements Condition showing the anticipated reduction in tons and percentage by emissions source (direct, indirect and transportation). The DEIR should include a clear and complete listing of modeling inputs (e.g., R-values, U-values, efficiencies, lighting power density, etc.) for items such as equipment, walls, ceilings, windows, lighting, HVAC units, etc. for both the Base Case and Build with Improvements Condition. The DEIR should describe additional GHG reduction measures expected to provide further benefits, but are not currently quantifiable (e.g., building orientation, building commissioning, use of an energy management system, Energy Star equipment, and water conservation and wastewater reduction measures, etc.). The DEIR should also identify TDM measures proposed for each of the alternatives and the corresponding emission reductions expected. Other tables and graphs may also be included to convey the GHG emissions and potential reductions associated with various mitigation measures as necessary.

The DEIR should use of the United States Energy Information Administration (EIA) Commercial Buildings Energy Consumption Survey (CBECS) Energy Use Index (EUI) values as a benchmark for the EUI resulting from modeling both the Base Case and Build with Improvements scenarios. While not required per the GHG Policy, but required as part of Stretch Code compliance, I encourage MassDOT to calculate the EUI and then compare the modeled building's EUI to those averages presented in the CBECS. This exercise is a helpful tool to understand the comparative improvements achieved for the proposed project and identifying potential modeling errors.

The DEIR should include a draft Tenant Manual designed to influence future tenants in the mixed-use space to fit-out and operate their spaces with sustainable and energy efficient designs and operating practices to reduce overall energy demand and GHG emissions. It remains unclear if the future occupation of the mixed use space will be owner-occupied, leased, or sold to future tenants for fit-out. However, it is assumed that future developer or tenants will require City of Boston building permits for their construction or fit-out, and will be required to comply with the Stretch Code adopted by the City. MassDOT should identify potential strategies that could be adopted as part of the joint/private development agreement to ensure that the GHG reduction goals modeled as part of the DEIR are met. These strategies may also form the basis for all third party lease agreements associated with the project. These strategies may include, but should not be limited to: identification of the core and shell features that are provided that allow tenant choices in energy-related fit-out (i.e., chilled water distribution capabilities, individual electric metering, the energy management systems (EMS) and other building features); requiring or encouraging tenants to adopt appropriate sustainable design, energy efficiency, water use, water pollution control, and TDM commitments to the extent feasible as part of their respective lease agreements.

The GHG analysis should also include a renewable energy evaluation considering the use of wind power, solar or photovoltaic (PV) panels, geothermal power, or the purchase of green power. The DEIR should include a separate analysis to determine if PV systems (either ground-mounted or building-mounted) to off-set electric demand or for hot water heating purposes are

feasible in association with this project. This feasibility analysis should use online DOER and Massachusetts Clean Energy Center (CEC) resources to calculate potential project cost, payback periods and returns on investment. MassDOT should consider both first-party and third-party ownership/lease scenarios. The DEIR should state assumptions with regard to available area for PV equipment, efficiencies, etc. If feasible, I encourage MassDOT to commit to the use of PV systems at their facilities. At a minimum, buildings should be "solar ready" to facilitate future installation of PV systems. If PV is not financially feasible, I request that the Proponent commit to revisit the PV financial analysis on a regular timetable and to implement PV when the financial outcomes meet specified objectives.

Because the project will generate in excess of 500,000 gpd of wastewater, the GHG analysis must assess the GHG emissions associated with the conveyance and treatment of project-related wastewater. MassDOT should review the GHG Policy and data available on the MEPA webpage for guidance on how to complete this calculation.

Finally, I encourage the Proponent to also consider the qualitative GHG reduction benefits that could be gained through commitments to preferred parking for hybrid vehicles and electric vehicle charging stations. More information on the opportunities associated with electric vehicle infrastructure can be found at the following websites: http://www.afdc.energy.gov/afdc/fuels/electricity.html and http://www.oregon.gov/ODOT/HWY/OIPP/docs/EVDeployGuidelines3-1.pdf . EEA staff can also provide additional information on the implementation of electric vehicle charging infrastructure initiatives in Massachusetts.

The DEIR should include an assessment of GHG emissions generated by mobile sources using data gathered as part of the mesoscale analysis. The DEIR should clearly state modeling assumptions, particularly regarding diesel train operations, potential idling times at South Station or layover facilities. For vehicular traffic, the DEIR should use traffic volume, delay and speed data along with emissions factors (as described in the Policy) for a No-Build existing condition, a future (2025 and 2040) Build condition and a future (2025 and 2040) Build with Mitigation condition. The DEIR should describe mitigation measures implemented as part of the future Build with Mitigation condition modeling. These measures may include, but should not be limited to, improvements to roadway operations, physical roadway infrastructure upgrades, implementation of a TDM program, railroad operations improvements and use of CO_2 reduction technologies.

Historic Resources

The DEIR should include the results of any consultations conducted with the MHC in accordance with State Register Review (950 CMR 71.00) and Section 106 of the National Historic Preservation Act of 1966 (36 CFR Part 800). While the ENF included a summary of historic resources potentially affected by the project the DEIR should expand this summary to identify potential historic or archaeological resources listed on the Registers or Inventory located on the site of, and within the vicinity of, the Widett Circle layover facility alternative. The DEIR should also identify the Area of Potential Effect (APE) for the project for both historic and archaeological resources and identify and evaluate historic and archaeological resources therein.

Reconnaissance surveys for historic or archaeological resources within each designated APE should be prepared in a manner consistent with that described in the ENF and in consultation with MHC.

As noted in the MHC comment letter, the DEIR should take into account the potential visual, atmospheric, and physical effects (shadow and wind) that the proposed development alternatives may have on surrounding historic properties. The DEIR must also consider the effect of the proposed demolition of the USPS General Mail Facility and the potential physical effects of construction-related vibration and methodology on the South Station Head House. Studies should also be performed to evaluate the potential effects of the proposed layover facilities alternatives on nearby historic properties.

Impacts associated with the project may be unavoidable. MassDOT should work with MHC and interested parties, such as the Boston Landmarks Commission, to develop appropriate mitigation measures to minimize or mitigate impacts to historic resources. The DEIR should include possible mitigation measures to be considered as part of the State Register and Section 106 Review processes. This may include the preparation of a Memorandum of Agreement (MOA) between affected parties.

Hazardous Materials

According to the ENF, MassDOT has initiated a Phase I Environmental Site Assessment (ESA) to identify any recognized environmental conditions associated with the South Station terminal, the USPS General Mail Facility and the alternative layover sites. The project will likely require reviews relative to the MCP given the historic uses within the project area. The DEIR should summarize the results of the Phase I ESA; and include all the alternative layover sites identified in this scope as part of the assessment. Based upon the results of the Phase I ESA, the DEIR should identify any MCP-regulated environmental conditions and list recommendations for further evaluation or testing to be conducted as part of a future Phase II ESA (if warranted). The DEIR should discuss how MCP-regulated conditions may impact construction techniques (i.e., dewatering, foundation types, etc.) or potential site infrastructure (e.g., groundwater and stormwater management). The DEIR should identify any State permits related to solid and hazardous waste mitigation at both the South Station and alternative layover facility locations.

Construction Period

The project must comply with MassDEP's Solid Waste and Air Pollution Control regulations, pursuant to M.G.L. c.40, §54. MassDOT should consult the MassDEP comment letter with regard to regulatory requirements and potential mitigation measures to be implemented during the construction period. Specifically, the MassDEP comment letter has provided significant information with regard to solid waste management during the construction period, recycling of construction and demolition (C&D) waste, asbestos removal requirements, and handling of asphalt, brick and concrete (ABC) associated with demolition activities. The ENF indicated that MassDOT will incorporate recycling initiatives within demolition plans for the USPS General Mail Facility. The DEIR should include a discussion of MassDOT's

recycling goals for solid waste generated as part of the project's construction and how demolition actitivies will comply with the goals of the Massachusetts Solid Waste Master Plan. This information may be included as part of a larger draft Construction Waste Management Plan for the project.

The DEIR should also describe potential project site construction period impacts (including but not limited to traffic management, materials management, parking, air quality and noise impacts, and other items as they related to the construction period) and analyze and outline feasible measures that can be implemented to eliminate or minimize these impacts. The DEIR should include a draft Construction Management Plan (CMP) to demonstrate how construction period impacts will be mitigated. Specifically, the DEIR should identify truck traffic routes associated with construction traffic, staging areas, and how safe pedestrian, bicycle and vehicle access to South Station will be maintained throughout the construction period for each proposed project phase. Depending upon the results of the TIAS, the project may require work at a number of off-site intersections and roadways to mitigate project-related traffic impacts. The DEIR should present a conceptual plan with a list of BMPs that could be selected by project contractors to reduce construction related environmental impacts for these roadway improvement projects. These BMPs should focus on erosion and sedimentation controls, staging areas, traffic management, and air/noise pollution. The DEIR should also discuss potential construction-period dewatering activities and related permitting requirements.

I encourage MassDOT to continue to develop staging and construction period access plans in collaboration with the City of Boston, Amtrak, the MBTA and other landowners as required. The DEIR should also describe how Amtrak, MBTA commuter rail and light rail, bus, and freight service will be modified and accommodated during project construction (on a per phase basis) for both the South Station Site and construction of selected layover facilities, as applicable.

The CMP should include appropriate erosion and sedimentation control BMPs. These erosion and sedimentation controls should be implemented and maintained in accordance with the Stormwater Pollution Prevention Plan prepared in accordance with the NPDES Construction General Permit requirements. MassDOT is advised that, if sources oil and/or hazardous material (OHM) are identified during the implementation of the project, notification pursuant to the MCP (310 CMR 40.0000) must be made to MassDEP, if necessary.

In accordance with MassDOT's GreenDOT Policy Directive, contractors are required to install emission control devices on all off-road vehicles in an effort to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD). I also encourage MassDOT to implement the use of recycled materials in pavement in accordance with MassDOT's Sustainable Design and Construction Best Practices.

Mitigation

The ENF did not include draft Section 61 Findings for each anticipated State Agency Action. The DEIR should include a separate chapter summarizing proposed mitigation

measures. This chapter should also include draft Section 61 Findings for each permit to be issued by State Agencies. The DEIR should contain clear commitments to implement these mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and a schedule for implementation. The DEIR should clearly indicate which mitigation measures will be constructed or implemented based upon project phasing, either tying mitigation commitments to overall project square footage/phase or environmental impact thresholds, to ensure that measures are in place to mitigate the anticipated impact associated with each development phase.

In order to ensure that all GHG emissions reduction measures adopted by MassDOT in the Build with Improvements Condition are actually constructed or performed by the MassDOT or third-party developers, I require proponents to provide a self-certification to the MEPA Office indicating that all of the required mitigation measures, or their equivalent, have been completed. Specifically, I will require, as a condition of a Certificate approving an FEIR (or Supplemental FEIR if necessary), that following completion of construction for each project phase, MassDOT (or a third-party developer) provide a certification to the MEPA Office signed by an appropriate professional (e.g., engineer, architect, transportation planner, general contractor) indicating that the all of the mitigation measures proposed in the FEIR have been incorporated into the project. Alternatively, MassDOT or a third-party developer may certify that equivalent emissions reduction measures that collectively are designed to reduce GHG emissions by the same percentage as the measures outlined in the FEIR, based on the same modeling assumptions, have been adopted. The certification should be supported by plans that clearly illustrate where GHG mitigation measures have been incorporated. For those measures that are operational in nature (i.e. TDM, recycling) MassDOT or the third-party developer should provide an updated plan identifying the measures, the schedule for implementation and how progress towards achieving the measures will be obtained. The commitment to provide this self-certification in the manner outlined above should be incorporated into the draft Section 61 Findings included in the DEIR.

Responses to Comments/Circulation

The DEIR should contain a copy of this Certificate and a copy of each comment letter received. In order to ensure that the issues raised by commenters are addressed, the DEIR should include direct responses to comments to the extent that they are within MEPA jurisdiction. This directive is not intended to, and shall not be construed to, enlarge the scope of the DEIR beyond what has been expressly identified in this certificate.

The Proponent should circulate the DEIR to those parties who commented on the ENF, to any State Agencies from which the Proponent will seek permits or approvals, and to any parties specified in section 11.16 of the MEPA regulations. A copy of the DEIR should be provided to DOER. A copy of the DEIR should be made available for review at the nearest neighborhood branches of the Boston Public Library.

April 19, 2013
Date

Richard K. Sullivan Jr.

Comments received:

03/22/2013	Nathaniel Curtis
04/01/2013	Stephen H. Kaiser
04/01/2013	James RePass
04/01/2013	Robert J. La Tremouille
04/01/2013	John A. Businger (with attachments)
04/04/2013	Jay Demasi
04/04/2013	A Better City
04/04/2013	Ellen Altman
04/04/2013	Boston Redevelopment Authority, Boston Transportation Department, and Boston Energy and Environment Department (joint letter)
04/05/2013	Massachusetts Office of Coastal Zone Management
04/05/2013	Frank DeMasi
04/08/2013	Joel Weber II
04/08/2013	Brad Bellows
04/08/2013	Boston Department of Public Works
04/08/2013	Representative Elaine C. O'Brien, Connecticut 61st Assembly District
04/09/2013	City of Cambridge
04/09/2013	Seaport Transportation Management Association
04/09/2013	Massachusetts Division of Marine Fisheries
04/09/2013	Sierra Club
04/09/2013	Association for Public Transportation
04/09/2013	Massachusetts Department of Environmental Protection – NERO
04/09/2013	Massachusetts Bus Association
04/09/2013	Massachusetts Historical Commission
04/09/2013	Wig Zamore
04/09/2013	Massachusetts Water Resources Authority
04/09/2013	WalkBoston
04/09/2013	Boston Water and Sewer Commission
04/09/2013	The Boston Harbor Association
04/09/2013	Harvard University
04/09/2013	495/MetroWest Partnership
04/09/2013	Stephen H. Kaiser (2nd letter)
04/11/2013	Representative Frank I. Smizik, Massachusetts 15th Norfolk District

RKS/HSJ/hsj

The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
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December 31, 2014

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
DRAFT ENVIRONMENTAL IMPACT REPORT

PROJECT NAME	: South Station Expansion Project
PROJECT MUNICIPALITY	: Boston
PROJECT WATERSHED	: Boston Harbor
EEA NUMBER	: 15028
PROJECT PROPONENT	: Massachusetts Department of Transportation
DATE NOTICED IN MONITOR	: November 5, 2014

As Secretary of Energy and Environmental Affairs, I hereby determine that the Draft Environmental Impact Report (DEIR) submitted on this project **adequately and properly** complies with the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62I) and with its implementing regulations (301 CMR 11.00). The Proponent may prepare and submit for review a Final Environmental Impact Report (FEIR) in response to the Scope provided below.

Project Description

As described in the DEIR, the project consists of an expansion of Boston's South Station by the Massachusetts Department of Transportation (MassDOT). The project, referred to as the South Station Expansion project, or SSX, is being undertaken to allow for expansion of intercity and high-speed rail (HSR) service into South Station and to improve existing rail operations and service delivery at South Station provided by the National Railroad Passenger Corporation (Amtrak) and the Massachusetts Bay Transportation Authority (MBTA). MassDOT, the MBTA, the Federal Railroad Administration (FRA) and Amtrak have identified the expansion of rail capacity at South Station as a critical regional and national transportation need. According to MassDOT, this need has been extensively documented in State and regional transportation plans including *Critical Infrastructure Needs on the Northeast Corridor* (2013);*The Northeast*

Corridor Infrastructure Master Plan (2010); *The Amtrak Vision for High-Speed Rail in the Northeast Corridor* (2010); *A Vision for the Northeast Corridor (2012);* MassDOT's *weMove Massachusetts: Planning for Performance* (the Commonwealth's 2040 Long-Range Transportation Plan (2014); MassDOT's *The Way Forward: a 21st Century Transportation Plan* (2013); MassDOT's *Massachusetts State Rail Plan* (2010); MassDOT's *Massachusetts Freight Plan* (2010); the MBTA's *Program for Mass Transportation* (2009); and the Boston Region Metropolitan Planning Organization's (MPO) *Paths to a Sustainable Region*, the long-range transportation plan for the metropolitan Boston region (2011).

To date, MassDOT has received $32.5 million from the FRA and $10 million in additional State funding to complete preliminary engineering and environmental assessment and permitting for the project. No additional sources of federal or State funding have been allocated for final engineering or construction of SSX.

South Station is the sixth busiest station in the national Amtrak system and is the terminus of Amtrak's Northeast Corridor (NEC) service and Lake Shore Limited service from Chicago via Albany; approximately 1.45 million Amtrak passengers used South Station facilities in 2012. From 2003 to 2012, the number of Amtrak passenger arrivals and departures through South Station increased by approximately 52 percent. South Station serves as the terminus for the western and southern lines of the MBTA's commuter rail system. There are nine main line approach tracks that currently converge in the South Station terminal area. Of these nine tracks, five arrive at South Station from the west, consisting of the NEC Main Line, which operate on tracks 1, 2, and 3, and the MBTA's Framingham/Worcester Line, which operates on tracks 5 and 7. The remaining four tracks arrive at South Station from the south, consisting of the MBTA's Fairmount Line, which operates on the Fairmount Line/Dorchester Branch tracks and the MBTA's Old Colony Line, which operates on the Old Colony tracks. Current weekday ridership at South Station includes an average of approximately 4,100 Amtrak combined boardings and alightings, and 42,000 combined MBTA commuter rail boardings and alightings.

South Station also provides connections to the MBTA's Red Line, Silver Line and local bus routes and intra-city bus routes run by private bus companies. Combined South Station boarding and alightings in 2012 include 54,000 on the Red Line, 12,700 on the Silver Line, 2,900 on local bus routes, and 12,200 on intercity/commuter bus routes.

According to the DEIR, the project will provide numerous benefits by supporting improved rail service, improved passenger service, pedestrian and bicycle improvements, improved vehicular circulation, improved multimodal connections, and supporting regional and local economic development. The project will improve operational efficiencies in and out of South Station, upgrade facilities to meet Americans with Disabilities Act (ADA) and life safety regulations, extend platform lengths to meet Amtrak and MBTA future berthing requirements, and enhance multimodal connections through this key transit hub. The project is expected to provide the ability to meet Amtrak's and the MBTA's established objectives of 95 percent on-time performance (OTP) for Acela and commuter rail service, and 90 percent for Amtrak Northeast Regional trains.

Currently, all 13 existing tracks and eight platforms are fully used by Amtrak and the MBTA, and both operators are constrained in their ability to increase service or offer new services due to the size and configuration of the station and terminal facilities. According to the DEIR, the daytime vehicle layover capacity for the MBTA's south side commuter rail service area is presently inadequate and unable to meet projected future demands. Additionally, South Station's passenger facilities, including platforms, waiting areas, and customer support services, do not meet preferred standards for passenger transit facilities. These deficiencies result in congestion and declining service reliability for Amtrak and the MBTA. The project is designed to reduce terminal capacity constraints, replace inadequate station facilities, and remedy problems associated with insufficient layover space.

The project is part of an overall plan to improve intercity and future HSR service in the NEC, as stated in Amtrak's *NEC Master Plan,* its *Vision for High Speed Rail in the Northeast Corridor*, and its 2012 update. By the year 2035, Amtrak projects that daily intercity rail ridership at South Station will increase to approximately 5,500 combined boardings and alightings. South Station commuter rail boarding and alightings are projected to increase to 56,000 daily riders by 2035. Amtrak's 2030 plans call for increased service between Boston and New York City and additional trains to operate over an "inland route" connecting Boston, Worcester, Springfield and New Haven. South Station presently operates with a total of thirteen tracks, all of which are fully utilized by Amtrak and the MBTA resulting in increasing congestion and declining service reliability.[1] Furthermore, there is insufficient vehicle layover space to meet existing and future South Station operational requirements. Amtrak and the MBTA currently store trains in the South Station terminal while waiting for slots at the existing south side layover yards.

The project is expected to improve the rail system's ability to absorb future demand along the MBTA's south side commuter rail lines and along the NEC. In the 2025 opening year, the project would support the projected increase in ridership of approximately 16,000 to 17,000 additional daily combined commuter rail and Amtrak intercity rail boardings and alightings at South Station over the No Build Alternative. By 2035, these numbers would increase to approximately 20,000 to 22,000.

The project includes five primary elements:

- Expansion of the South Station terminal facilities by approximately 400,000 square feet (sf) by adding seven tracks and four new platforms, reconfiguring existing platforms, and constructing larger passenger circulation and waiting areas, amenities, and back of house space. The Tower 1, Broad and Cove Interlockings will be reconfigured to reduce conflicting movements through the terminal area;[2]
- Acquisition and demolition of the U.S. Postal Service (USPS) General Mail Facility located on Dorchester Avenue to provide a 16-acre site upon which to expand South Station and restore Dorchester Avenue for public and station access. As part of the The

[1] South Station currently has less than half the original track capacity that was available when the station was first opened in 1899.

[2] An interlocking is a segment of railroad infrastructure comprised of track, turnouts, and signals linked (interlocked) in a way that allows for trains to move from on track to another, or across tracks, safely by preventing conflicting train movements.

USPS facility acquisition is identified as a state-funded project in the MBTA's current *FY2015-FY2019 Capital Investment Program (CIP)*;

- Creation of an approximately 2,500-foot extension of the Harborwalk along a reopened two-way Dorchester Avenue that will include pedestrian, bicycle, local transit, and vehicular improvements;
- Creation of opportunities for joint/private development adjacent to and/or over an expanded South Station. MassDOT anticipates that revenue from future air rights development could assist in supporting public transportation investments;
- Construction of additional rail layover space to address existing and future Amtrak and MBTA service expansions and other planned improvements. Layover facilities are used to store, service, inspect, and maintain trains when they are not in service.

The approximately 49-acre South Station project site is bounded by Summer Street to the north, Dorchester Avenue and the Fort Point Channel to the east, Atlantic Avenue to the west, and the MBTA's Cabot Yard to the south. The South Station project site also extends along a portion of the NEC Main Line to the west past the Cove Interlocking and along the MBTA's Fairmount/Old Colony Railroad Line to the south just past the Broadway Interlocking. South Station is located at the junction of several Boston neighborhoods including Chinatown, the Leather District, the Fort Point Channel, and the Seaport-Innovation District/South Boston Waterfront.

The project also includes the construction of layover facilities within the City of Boston. After completion of a layover facility alternative analysis that evaluated 28 potential locations, four sites for new and/or expanded layover facilities were further considered as part of the DEIR. These potential layover locations include:

- The Boston Transportation Department (BTD)-owned Tow Lot located along Frontage Road approximately one track-mile from South Station;
- Widett Circle, a 29.4-acre site located approximately one mile south of South Station at 100 Widett Circle and 1 and 2 Foodmart Road, primarily in private ownership;
- Beacon Yard Park, a freight yard and intermodal terminal most recently used by CSX Transportation, Inc. (CSXT) located along Cambridge Street in the Allston section of Boston, approximately four track-miles on the MBTA Framingham/Worcester Line from South Station; and
- Readville Yard 2, an existing MBTA layover yard and maintenance facility located off Wolcott Court in the Hyde Park section of Boston, approximately nine track-miles from South Station.

MEPA Procedural History

The DEIR was noticed in the November 5, 2014 Environmental Monitor. At the request of MassDOT, the review period was extended from the typical 30 days to 49-days. MassDOT held a public hearing on November 18, 2014 to review the DEIR and allow opportunities for questions and comments from the public.

Portions of the project site have previously been subject to MEPA review as far back as 1973. As previously indicated in the Environmental Notification Form (ENF), projects filed on the South Station site include:

- EEA No. 243 – South Station Urban Renewal Project;
- EEA No. 2868 – South Station Project;
- EEA No. 3173 – Temporary South Station Bus Terminal;
- EEA No. 3205 – South Station Project;
- EEA No. 4049 – Tunnel Ventilation Program Phase 1;
- EEA No. 4327 – South Station Wye Connector;
- EEA No. 3205/9131 – South Station Air Rights Project; and
- EEA No. 10270 – North/South Rail Link Project.

Of these prior filings, only three projects required the preparation of an EIR. The South Station Air Rights Project (SSAR) (EEA Nos. 3205 and 9131) consists of a 1.8 million square foot mixed-use development located on the northern end of the site above existing portions of the South Station headhouse and tracks. The project also includes a 70,000-sf horizontally expanded bus terminal, pedestrian connections from the train station concourse and platforms to the expanded bus terminal, and a 775-space three-level parking garage located above the bus terminal. The SSAR includes modifications to existing platform lengths at South Station, reducing platform lengths on Tracks 3-10 between 20 and 89 feet. The EIR complied with M.G.L. Chapter 30 and the Proponent filed a Notice of Project Change (NPC) for an extension of time in 2012.

The North/South Rail Link (NSRL) Project consists of a three-mile tunnel linking North and South Stations and associated rail infrastructure. The DEIR for this project was determined to adequately and properly comply with the MEPA Regulations in July 2003. A Final EIR has not been filed for this project. Given the lapse of time since the filing of the DEIR, this project, if it were to advance, would require reinitiating the MEPA review process with the filing of an ENF.

I have received numerous comments requesting that the scope of the SSX Project improvements include underground rail tracks and platforms for the NSRL Project. In the DEIR, MassDOT responded to similar requests that it is not currently in a financial position to endorse or advance the design of the extensive underground infrastructure associated with the NSRL. Furthermore, MassDOT stated that due to change in the physical nature of the corridor since the construction of the Central Artery Project, as well as new assumptions regarding staging, construction and costs since the last formal assessment of the NSRL, it believes that many of the goals of the NSRL project can be accomplished through more incremental efforts, such as the expansion of South Station. I acknowledge that a key benefit of the NSRL project that will not be realized by the SSX project currently under review is a seamless connection between South Station and North Station. This connection would provide enhanced service along the MBTA commuter rail, subway, and NEC lines and would facilitate operations and maintenance by eliminating the need to run non-revenue trains to reach more distant layover facility locations. MassDOT reiterated in the DEIR that the SSX project will be advanced in such a way that it will

not preclude the potential for future underground infrastructure, such as tunnel portals and station locations.

Jurisdiction and Permitting

This project is subject to MEPA review and requires the preparation of a mandatory EIR because it requires State Agency Actions and exceeds several MEPA review thresholds including:

- Expansion of an existing non-water-dependent structure, provided the use or structure occupies one or more acres of (historic) tidelands (301 CMR 11.03(3)(a)(5));
- New discharge or expansion in discharge to a sewer system of 100,000 or more GPD (301 CMR 11.03(5)(b)(4(a));
- Generation of 3,000 or more unadjusted new additional daily trips on roadways providing access to a single location (301 CMR 11.03(6)(a)(6)); and
- Construction of 1,000 or more new parking spaces at a single location (301 CMR 11.03(6)(a)(7)).

The project requires a c.91 Waterways License and may require a Section 401 Water Quality Certification (401 WQC) from the Massachusetts Department of Environmental Protection (MassDEP), a Vehicular Access Permit from MassDOT, and air-rights easements or approvals from the MBTA.[3] The project also requires an Amendment to the Fort Point Channel Downtown Waterfront Municipal Harbor Plan (MHP) and a Public Benefit Determination issued by the Executive Office of Energy and Environmental Affairs (EEA). The project may also require a MassDEP Dewatering General Permit for dewatering of non-contaminated groundwater and a MassDEP Remediation General Permit for dewatering of contaminated groundwater. The project may require an 8(m) Permit, Construction Site Dewatering Discharge Permit and/or a Sewer Use Discharge Permit from the Massachusetts Water Resources Authority (MWRA).

The project is subject to State Register Review (950 CMR 71.00) and Section 106 Review (36 CFR 800) by the Massachusetts Historical Commission (MHC). A Federal Consistency Certification from the Massachusetts Office of Coastal Zone Management (CZM) will also be required.

An Order of Conditions will be required from the Boston Conservation Commission, or in the case of an appeal, a Superseding Order of Conditions from MassDEP. The project will also require a Drainage Discharge Permit and may require a Dewatering Discharge Permit from the Boston Water and Sewer Commission (BWSC). Construction of the public/private development areas above South Station will require review by the Boston Redevelopment Authority (BRA).

The project requires several federal permits/approvals including, but not limited to: approval under the National Environmental Policy Act (NEPA), Part 77 Airspace Review from the Federal Aviation Administration (FAA), Modification of High Occupancy Vehicle

[3] Since the filing of the ENF, the MassDEP Sewer Regulations (314 CMR 7.00) have been amended. The project is no longer anticipated to require a MassDEP Sewer Connection Permit (BRP WP 74). Wastewater permitting will be undertaken by the Boston Water and Sewer Commission.

Designation review by the Federal Highway Administration (FHWA), Section 4(f) Review by the United States Department of Transportation (USDOT) and a National Pollutant Discharge Elimination System (NPDES) Construction General Permit from the United States Environmental Protection Agency (EPA). The project may require a NPDES Permit, a Notice of Intent, or a NPDES Permit Exclusion associated with construction period dewatering. The project is subject to the MEPA Greenhouse Gas (GHG) Emissions Policy and Protocol.

The project will receive Financial Assistance in the form of funding from the Commonwealth and the Federal Railroad Administration (FRA). Therefore, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

Project Changes Since the ENF

The DEIR presented modified project alternatives to those outlined in the ENF. These modifications were generally attributable to advancement in project design and environmental assessments. These updated project alternatives are described in detail later in this Certificate.

Since the ENF, MassDOT concluded that the Beacon Park Yard (BPY) layover site is the preferred location to the west of south station to meet existing and future MBTA commuter rail layover needs. This facility is proposed to provide storage for up to 20 eight-car trainsets in a parallel track arrangement and support facilities for MBTA operations. The BPY site is located within the study area of a separate MassDOT project, the Interstate 90 (I-90) Allston Interchange (EEA No. 15278). This project proposes myriad transportation and multi-modal improvements within Boston's Allston neighborhood and is intended to support redevelopment of land formerly owned by CSX and now under the control of Harvard University. In order to facilitate an evaluation of the cumulative environmental impacts associated with the proposed layover facility operations at BPY in conjunction with other elements of the I-90 Allston Interchange Project, I incorporated the assessment of environmental impacts from the BPY layover yard into the scope for a DEIR outlined in the Certificate on the ENF issued on December 24, 2014 for the I-90 project. However, as detailed later in this Certificate, the operational impacts of rail layover facilities located at BPY in relation to the future operations at South Station will continue to be addressed in conjunction with the South Station Expansion (SSX) project.

Review of the DEIR

Project Description and Permitting

The DEIR included a description of the proposed project elements and related potential environmental impacts. The DEIR included updated site plans depicting existing and post-development conditions for each project alternative. The existing conditions analysis highlighted operational constraints due to station design (e.g., no mid-platform boarding, substandard platform widths and lengths) and layover facility locations. Furthermore, the DEIR described how the proposed changes to the South Station headhouse and platforms will be integrated into

the existing South Station building and platforms, including connections to other modes of transit (e.g., private and MBTA buses, Red Line and Silver Line) and Main Line commuter rail operations. The DEIR included a table that identified anticipated permits from State, local and Federal entities for both the South Station site and the proposed layover sites. Draft Section 61 Findings for use by State Agencies in the permitting process were also included in the DEIR.

Project Purpose and Need

The DEIR included an extensive discussion of the project's purpose and need, with supporting ridership data and an evaluation of existing infrastructure deficiencies. The DEIR generally used an approximate opening year of 2025 and a horizon year of 2035 for the analyses performed in conjunction with the evaluation of potential project-related impacts.

According to the DEIR, terminal capacity constraints are attributable to the limited number of platform tracks and the configuration(s) of the track infrastructure (one main track and multiple approach interlockings). Because South Station is a terminal facility, every arriving train must be reversed to either leave the station for a new revenue trip, or to access a layover facility, further limiting station capacity. Furthermore, the configuration of the interlockings near South Station create additional challenges for train movements in and out of the terminal. These constraints were described as follows in the DEIR:

- **Tower 1 Interlocking** - South Station's main interlocking, Tower 1 is located immediately south of the terminal at the northern end of all Amtrak and MBTA lines that come into South Station from the west and south and consists of nine main line approach tracks converging into 13 station tracks and eight platforms. All moves for berthing trains entering or exiting South Station occur at Tower 1 Interlocking. In its current configuration, Tower 1 Interlocking contains two long ladder tracks, tracks that link a series of parallel tracks, which allow a train approaching South Station on any track to reach nearly every platform track. While this layout provides operational flexibility, it creates a bottleneck for Amtrak and MBTA operations by limiting the number of trains that can simultaneously move through the interlocking, resulting in service delays.

- **Cove and Broad Interlockings** – Located south and west of Tower 1 Interlocking are two additional approach (or "setup") interlockings. Cove Interlocking is located approximately 0.5 miles from South Station on the NEC and MBTA's Framingham/Worcester Line and serves as a universal interlocking for four of the five tracks approaching South Station. Cove Interlocking does not provide access to all tracks entering South Station. This interlocking allows trains to access the MBTA and Amtrak maintenance facilities via the Wye track. Broad Interlocking, located adjacent to the MBTA's South Side S&I facility, provides limited access between the MBTA Fairmount and Old Colony Railroad main line tracks and does not allow universal access to all tracks in both directions. This interlocking also allows trains to access the South Side S&I facility and to and from Cove Interlocking via the Wye track. The limitations of these two interlockings restrict "setup" train moves for appropriate tracks entering the station that could take place outside of the South Station terminal area, forcing them to take place within the Tower 1 Interlocking. According to the DEIR, this lack of

operational flexibility increases the number of conflicting movements within the already constrained Tower 1 Interlocking, exacerbating congestion, inefficiencies, and delays for trains and passengers.

Finally, the configuration of the Tower 1, Cove and Broad Interlockings also require many diverging moves in and out of the station to be made at Tower 1 Interlocking, at a speed of 10 miles per hour (mph), rather than the Cove or Broad Interlockings, which can be performed at speeds of 30 mph.

The DEIR emphasized the importance of improving service reliability, measured by OTP, at South Station. As noted by MassDOT, the interconnectedness and complexity of service at South Station results in individual train delays not only directly impacting overall station operations, but a cascading effect upon service line operations. Data presented in the DEIR indicate that both Amtrak NEC and MBTA commuter rail service have not met respective OTPs from 2008 to 2012.

Future (2035 No-Build) ridership growth on Amtrak and the MBTA commuter rail system are projected to increase operations at South Station for both revenue and non-revenue trips. Current weekday operations at South Station include 40 Amtrak and 280 MBTA revenue trips and 32 Amtrak and 97 MBTA non-revenue trips, for a total of 449 daily train movements at South Station terminal. By 2035, weekday operations at South Station are estimated to include 80 Amtrak and 315 MBTA revenue trips and 58 Amtrak and 101 non-revenue trips, for a total of 554 daily train movements at South Station terminal, an increase of 23 percent. To accommodate the 2035 operating plan, MassDOT performed simulation tests to determine the appropriate number of station tracks at South Station. These tests concluded that 20 total station tracks (an expansion of 7 tracks) would provide the optimal size to allow train volumes to pass through the Tower 1 Interlocking.

Expansion of South Station, along with implementation of other rail improvement projects, is expected to increase demand of vehicle layover facilities. The DEIR provided a clear analysis identifying the current vehicle layover space deficiencies, and described the additional demand associated with the SSX project. Current MBTA service levels require daytime layover space for 28 trainsets (locomotives and coaches); space exists for only 22 trainsets within dedicated layover facilities. This results in the storage of six non-revenue trains at South Station platforms while waiting for available slots at existing south side layover locations. Storage of trains on the platforms increases congestion at the terminal and creates operational conflicts.

According to the DEIR, Amtrak's current peak layover capacity for South Station service is eight trainsets during the day and 13 trainsets overnight. All of Amtrak's existing layover needs are accommodated at the Southhampton Street Yard. Amtrak's Front Yard is not used by Amtrak for layover functions, but is used for MBTA layover and Amtrak non-revenue trains, rail-bound equipment storage, and Amtrak maintenance-of-way material storage needs.

Layover space is needed to accommodate future MBTA service increases, fleet expansion and transition to longer trainsets (eight-car). Additionally, Amtrak will need to expand within its existing facilities to accommodate layover needs associated with its future service projections

(20 overnight trainset layover spots). While Amtrak has not identified the location of future layover needs, it indicated that it does not foresee a need for additional capacity beyond the use of its current system-wide Amtrak-owned facilities. The MBTA projects that by 2040 it will have the capacity to store only 28 of the 49 trainset spaces needed.[4]

As noted in the DEIR, the location of layover facilities is one of the main factors that determine the required diverging moves within Tower 1, Broad and Cove Interlockings. Currently, all layover facilities are located south of South Station, despite 60 percent of all revenue trains approaching South Station from the western routes. With the addition of Amtrak revenue trains, approximately 70 percent of trains approach from western routes. Exclusively southerly-located layover facilities contribute to the capacity constraints at South Station. While trains accessing layover facilities are non-revenue trains, they are still required to be dispatched carefully, and must pass through the Tower 1 Interlocking just like revenue trains. MassDOT noted the challenges of balancing competing revenue and non-revenue train movements to maximize operational performance near South Station. Given these constraints, MassDOT determined that rail layover facilities should be provided both west and south of South Station, with such split layover facilities improving operations and reducing conflicting movements by keeping trains on one side of the terminal or the other.

Finally, the DEIR discussed the need to improve substandard facilities at South Station. MassDOT has established an overall level of service (LOS) goal of LOS C for the South Station public circulation areas and LOS D for the station platforms in conjunction with the project. The current size and configuration of South Station headhouse facilities do not adequately support current and future passenger service needs. According to the DEIR, the existing headhouse and platforms result in a poor passenger experience (LOS E or F) and the concourse configuration results in confusion and inadequate connections between intercity rail, commuter rail, bus, and transit service.[5] Furthermore, the station platforms do not comply with modern design standards, including MassDOT's current standard island platform requirements. Presently, Track 1, 2, and 12 can hold a maximum of seven-car MBTA trainsets and Track 13 can only accommodate a six-car MBTA trainset. Train length for Amtrak's Acela service is 664 feet and 748 for Amtrak regional trainsets. The MBTA and Amtrak have identified future berthing requirements associated with longer trainsets at 850 feet and 1,050 feet, respectively. Current platform LOS is adequate (LOS D) with the occupant load of one MBTA commuter rail bi-level coach consisting of an eight-car trainset, but services sharply decline when concurrent train arrivals occur on the same platform. The proposed project design includes platform and passenger waiting area improvements to meet MassDOT's LOS goals and provides a facility that remains a viable and attractive alternative to air and automobile travel.

Public Involvement and Agency Outreach Efforts

The DEIR summarized MassDOT's public involvement and Agency coordination efforts associated with the South Station design and MEPA review process. MassDOT has and will continue to use a variety of techniques to facilitate public engagement. These techniques include:

[4] This analysis assumed that by 2025, the MBTA would be using a four-track layover yard on an MBTA easement at Beacon Park Yard for layover of 12 trainsets. This analysis also assumed reduced capacity by six trainsets at Southampton Yard and Front Yard due to the proposed expansion of the MBTA's fleet to eight-car trainsets.

[5] Levels of Service (LOS) for pedestrian flow and queuing range from LOS A (no crowding) to LOS F (extreme crowding).

- Project Mailing List – MassDOT maintains a database of individuals and organizations and sends regular email updates, including the availability to review documents and public meeting dates;
- Social Media – MassDOT provides project-related updates through the MassDOT blog, Twitter, and Facebook pages;
- Meetings and Events – MassDOT hosts public informational meeting to share milestone information and collect comments and suggestions. These meetings have been held with a variety of community, civic, business, and citizen groups potentially affected by the project;
- Online survey – MassDOT opened an online survey in fall of 2013, available in English, Spanish and Chinese, to gather feedback on current and future amenities at South Station. MassDOT will consider the findings of the survey as the project design progresses; and
- Other Project Materials – MassDOT maintains a project website, creates project fact sheets and project snapshots for a non-technical audience, and created a project brochure available in English, Spanish, and Chinese.

Finally, while this project is not subject to the EEA Environmental Justice (EJ) Policy, MassDOT committed to evaluate the project for potential impacts to EJ communities based on federal and State guidelines. The DEIR included an EJ and Title VI Technical Report (EJ Report) prepared in accordance with the ENF and DEIR Certificates and the FRA's *Procedures for Considering Environmental Impacts* (1999). The EJ Report was prepared to demonstrate that MassDOT and the SSX project are in compliance with Title VI of the Civil Rights Act of 1964 and EEA's *Environmental Justice Policy.* The EJ Report described the study's methodology, existing conditions within the study area (both South Station and each potential layover site) with regard to minority, low income, or limited English proficiency populations, and potential project-related impacts to these identified EJ populations. Potential types of impacts assessed included:

- Changes in accessibility and mobility for EJ and disabled populations, compared to changes for non-disadvantaged populations;
- Direct impacts due to relocations and other indirect property impacts; and
- Indirect impacts due to air quality and noise impacts.

The DEIR identified the following conclusions from the EJ Report:

- The proposed transportation improvements will improve station accessibility and mobility for all users, including EJ and Title VI populations;
- The project will not result in disproportionate impacts to EJ and Title VI populations and will not directly displace these populations; no residences will be displaced by the project; and
- The displacement of the USPS facility could affect some EJ and Title VI populations due to facility relocation efforts. However, this facility is anticipated to be relocated within the area. Similarly, the displacement of 30 businesses at the Widett Circle layover facility could affect EJ populations. The EJ Report noted that it is anticipated

that businesses would be relocated in the Boston Area and would not result in the long-term loss of employment.

The EJ Report also included the results of Central Transportation Planning Staff (CTPS) travel demand modeling used to asses any changes to accessibility to needed services or employment for EJ populations. This analysis indicated that the SSX project will result in minimal or no changes for the communities of concern in any of the project alternatives. Finally, permanent changes in the No Build and Build Alternatives are expected to be negligible (either no change or changes of less than two percent) between both EJ and disabled populations and non-disadvantaged populations. The EJ Report concluded that impacts in the No Build and Build conditions will not be disproportionate or adverse on EJ communities or populations.

Alternatives Analysis

As noted previously, since the ENF MassDOT has continued to refine the project alternatives subsequent to additional evaluation of track configuration and platform alternatives, station concept design, layover facility concepts, and joint/private development alternatives.

The DEIR presented the results of an initial (Tier 1) screening of track configuration alternatives for South Station. The Tier 1 screening evaluated a series of "unconstrained" and "constrained" rail alternatives to develop potential track configurations. Unconstrained alternatives included those that were not limited by existing site boundaries and included opportunities located outside the original project study area. MassDOT determined that while these alternatives could accommodate Amtrak and MBTA service expansions, they resulted in unacceptable challenges associated with land acquisition, construction phasing, and separated passenger rail services. These alternatives were dismissed from further consideration.

Constrained alternatives focused on minimizing impacts to existing infrastructure, including SSAR infrastructure, while remaining within the project study area and improving terminal operations. MassDOT developed four alternatives with various layouts at the terminal and Tower 1 Interlocking to optimize operational flexibility, minimize disruption to existing operations, and/or maximize future joint development on-site. Each of these alternatives was subjected to a set of evaluation criteria: platform accessibility, infrastructure maintenance, constructability, and capital cost. The DEIR included tables identifying platform accessibility and the location of proposed crossover moves (i.e., Cove, Tower 1, or Broad) by service line (e.g., NEC, Old Colony, etc.) for each Constrained Alternative.

The DEIR also assessed platform length consistency for each Constrained Rail Alternative (CRA) with the established future platform length requirements by the MBTA (850 feet) and Amtrak (1,050 feet). This assessment included the projected track length reductions associated with the SSAR project. The DEIR described potential innovations MassDOT may incorporate into the project to maximize platform length given the constrained area. These include:

- Locating the locomotive and a portion of the first coach outside the platform, without the ability to board/alight at both ends of the coach. This approach

reduces platform berthing requirements by 135 feet, reducing the effective platform length to accommodate Amtrak trainsets to 915 feet and MBTA trainsets to 715 feet;
- Using a fixed type bumping post in lieu of the longer bumping posts currently in use at South Station;
- Terminating the overhead contact system (OCS) within the station area and using existing station structures (e.g., canopies, beams, columns) to support the OCS instead of using OCS tie-off poles.

The DEIR identified the amount of Tower 1 Interlocking trackwork requirements for each CRA, noting that less trackwork would result in less ongoing maintenance cost. Constructability of each CRA was assessed by evaluating the potential impact constructing the project would have on maintaining ongoing operations at South Station. Some alternatives would require completely shutting down South Station operations, requiring substitute transportation and busing for period of up to two to three years. Finally, order-of-magnitude capital costs for each CRA were determined, considering costs associated with all tracks, signal system, OCS, communication system, and associated civil work within the terminal and station areas, and the interlocking. These order-of-magnitude costs range from $138 million (CRA 3) to $493 million (CRA 1).

Based on the results of this assessment, two of these alternatives, CRAs 2 and 3, will be advanced to a Tier 2 screening process. Both of these alternatives support a 20-track South Station layout with up to eight trains moving through Tower 1 Interlocking simultaneously, increase terminal capacity by approximately 55 percent, create new 22-foot wide platforms that meet current ADA and National Fire Protection Association (NFPA) standards, establish direct access to the bus terminal and other modes of transit at South Station, and avoid impacts to the existing South Station Bus Terminal and future bus expansion elements of the SSAR project.

Constrained Rail Alternative 2 (CRA2) would streamline operations at South Station by redesigning the Tower 1 Interlocking to reduce the number of conflicting movements through the interlocking. NEC and Worcester/Framingham routes would access the westerly station tracks and the Fairmount and Old Colony routes would access the easterly station tracks. CRA 2 would also allow access to the MBTA's South Side Service and Inspection (S&I) facility for 18 of the terminal tracks. Tower 1 Interlocking would require extensive reconfiguration. While work could be staged to avoid completely shutting down South Station service during construction, it would likely result in substantial impacts to South Station operations during the construction period.

Constrained Rail Alternative 3 (CRA3) would include the construction of additional terminal tracks by adding special trackwork to the existing Tower 1 Interlocking, minimizing disruptions during the construction period. CRA 3 would maximize platform accessibility by facilitating universal platform accessibility for trains approaching on the Fairmount and Old Colony. Trains traveling on the Framingham/Worcester and NEC routes would have varying access to platforms contingent upon whether crossover moves were made at Tower 1 or Cove Interlockings (Tracks 1-14). CRA 3 would allow access the S&I facility for all tracks.

CRA 2 and CRA 3 include improvements to Cove and Broad Interlockings. These improvements include the installation of new crossovers, track realignment, and installation of a third running track at Broad Interlocking. These improvements will move conflicting train movements to areas outside the terminal that accommodate higher speeds and improve operations at the Tower 1 Interlocking while maintaining the flexibility of train movements within South Station. Additionally, these layout improvements would continue to provide the operational flexibility necessary in the event of an emergency or equipment failure.

The DEIR noted that station, track and layover facility designs will not preclude the placement of infrastructure associated with any future rail electrification that may be undertaken by MassDOT, nor preclude the potential use of diesel multiple units (DMU) if and when they may be incorporated into the MBTA future fleet. Furthermore, the DEIR stated that the project does not include any upgrades for freight traffic, but does not preclude Track 61 from being used for freight service to the Port of Boston in the future. I do note, however, that the introduction of potential future routes, such as those mentioned in some comment letters (e.g., DMU connections from Back Bay to the Boston Convention and Exhibition Center) present their own operational challenges, as they require crossing the NEC. If these projects are designed, funded, and advanced, MassDOT will be required to consider their potential impact on the operational improvements gained through the SSX project itself. However, this analysis is beyond the scope of the SSX project currently under review.

The DEIR also described the results of an initial screening analysis undertaken for the conceptual design of South Station. Similar to the track configurations, this initial evaluation considered both "unconstrained" and "constrained" alternatives. According to the DEIR, initial unconstrained alternatives included expanding the South Station footprint to include the USPS facility site, 245 Summer Street and relocating or altering the SSAR project. MassDOT opted to eliminate concepts that required the acquisition of 245 Summer Street or substantial alteration of the SSAR project to allow for advancement of design alternatives that are more financially feasible and readily constructible. The DEIR outlined a series of design principles for the expansion of the South Station headhouse. These design principles are intended to guide a design responsive to good planning and urban design, station architecture, access and connectivity, and historic preservation.

The DEIR included an expanded alternatives analysis that contained conceptual site layout plans, a summary of potential environmental impacts, and a supporting narrative for each of the following alternatives for the South Station Site:

- A No Build Alternative;
- Alternative 1 – Transportation Improvements Only;
- Alternative 2 – Joint/Private Development Minimum Build; and
- Alternative 3 – Joint/Private Development Maximum Build.

MassDOT has not identified a Preferred Alternative amongst the build alternatives. MassDOT will select a Preferred Alternative prior to submission of the FEIR.

No Build Alternative

The No Build Alternative consists of the following:

- Completion of the SSAR project, including associated expansion of the bus terminal and parking garage and modifications to the platforms and headhouse in the northern portion of the South Station rail terminal.
- South Station would remain in its current configuration with 13 tracks and 8 platforms, with terminal operations, including the Tower 1, Broad and Cove Interlockings configurations remaining unchanged. Activities conducted as part of the MBTA's State of Good Repair (SGP) program would be completed;
- The USPS General Mail Facility would not be relocated and the majority of Dorchester Avenue would remain unavailable for public use;
- Current roadway configurations surrounding South Station would remain unchanged (e.g., Atlantic Avenue, etc.);
- There would be no extension of the Harborwalk along the Fort Point Channel adjacent to the USPS facility;
- There would be no implementation of bicycle and pedestrian accommodations through and around the site; and
- There would be no expansion of joint/private development.

Alternative 1 – Transportation Improvements Only

Alternative 1 includes the expansion of South Station onto the 14-acre USPS facility site, only, with no additional provisions for joint/private air rights development. The South Station terminal would be expanded by 400,000 sf, to a total of 610,000 sf consisting of passenger platform areas and concourse levels with passenger support services, including amenities such as food and beverage sales. Capacity improvements would include the construction of seven new tracks and four new platforms for a total of 20 tracks and 11 platforms. Additionally, several existing tracks and platforms and the Tower 1, Cove and Broad Interlockings would be reconfigured. This Alternative would accommodate the previously approved air rights and station modifications associated with the SSAR project. This alternative also includes the reopening of Dorchester Avenue for public and station access, a 2,500-foot extension of the Harborwalks along Dorchester Avenue, and improved pedestrian and bicycle connections. An existing MBTA/BRA easement (presently utilized as a patio for 245 Summer Street) would be required to reopen Dorchester Avenue as a two-way street.

Alternative 1 also includes the implementation of a series of transit improvements projects expected to be in place by 2035 as indicated in the Boston area's Regional Transportation Plan (RTP). These projects include, but are not limited to:

- South Coast Rail commuter rail service;
- Green Line Extension to Tufts University and Union Square;
- Increased frequencies on the Fairmount Line with four new stations;
- The Silver Line Gateway Project; and
- Increased service on Amtrak intercity trains.

Alternative 2 – Joint/Private Development Minimum Build

Alternative 2 includes all of the transportation improvements provided in Alternative 1 with provisions to support future development through incorporation of appropriate structural foundations into the overall station and track design. Since a specific building program or development partner has not been established for air rights development, MassDOT, as directed by the MEPA office, evaluated the potential environmental impacts associated with a future project that would comply with existing State and local regulations, including existing building height and setback from the Fort Point Channel requirements in the c.91 regulations, the Fort Point Downtown Municipal Harbor Planning Area requirements, and the Massachusetts CZM program. This alternative consists of 660,000 sf of mixed uses including residential (220,600 sf), office (255,500 sf), retail (79,300 sf) and hotel (104,600sf) space located in six buildings ranging up to 12 stories (142 feet) in height. Approximately 234 parking spaces would be provided in structured underground parking.

Alternative 3 – Joint/Private Development Maximum Build

Alternative 3 includes all of the transportation improvements provided in Alternative 1 with provisions to support future development through incorporation of appropriate structural foundations into the overall station and track design. Alternative 3 would also include a joint/private development program unencumbered by the height and setback requirements included in Alternative 2, but would instead only be limited by the FAA's maximum height limit of 290 feet associated with Boston's Logan Airport. This alternative would require an amendment to the Municipal Harbor Plan (MHP), which would modify applicable c.91 regulations for this site. Alternative 3 consists of approximately 2,000,000 sf of mixed uses including residential (774,700 sf), office (917,300 sf), retail (75,620 sf) and hotel (266,600 sf) space in six buildings ranging up to 21 stories (not exceeding 290 feet). Approximately 506 parking spaces would be provided in structured underground parking.

Joint/private development alternatives were based on station requirements, engineering considerations, urban design criteria and financial feasibility. Concepts developed for the track configuration, station design, and layover facility sites are the same in each Build Alternative. Therefore, differences between alternatives presented in the DEIR are limited to those associated with Alternatives 2 and 3. According to the DEIR, MassDOT is conducting an in-depth financial feasibility analysis of joint/private development alternatives to determine financial viability, including potential revenues associated with leasing the air rights to a developer. The results of this analysis should inform the selection of a Preferred Alternative to be presented in the FEIR.

Layover Sites

The DEIR presented the results of a Tier 3 layover site screening analysis, building upon data prepared for the ENF and direction provided in the scope for the DEIR. MassDOT has determined that no single site can provide the physical and operational requirements to fully meet South Station's layover needs. The Tier 3 analysis included evaluation of various layover facility combinations to determine their ability to best meet system-wide layover needs, including expanded service at South Station and use of the four existing layover locations.

Established screening criteria included: ability to meet layover capacity and program needs, railroad operations requirements, and order-of-magnitude cost estimates. The FEIR will present a Preferred Alternative regarding layover facilities, assumed to include BPY and some combination of Widett Circle and/or Readville Yard 2.

Layover No Build Alternative

The DEIR described layover facility conditions associated with a No Build Alternative. In the No Build Alternative, Amtrak and the MBTA would continue to use Amtrak's Southampton Street Yard and the MBTA's Readville Yard 2 and S&I facilities as midday layover sites to support South Station operations. According to the DEIR, due to the planned expansion of the MBTA's fleet to all 8-car trainsets by 2035 (current trainsets vary from 5 to 8 cars) the MBTA would experience reduced layover capacity at Southampton Yard. Amtrak's Front Yard, currently used by the MBTA for midday layover for trainsets with six cars or less, would no longer be available for midday storage. Therefore, in this alternative, the MBTA would increasingly be required to store non-revenue trains at South Station platforms, outlying facilities, or by moving them around within the MBTA system while waiting for slots at the south side layover facilities. Widett Circle would remain in private ownership and no changes would be implemented at BPY.

BTD Tow Lot Layover

The approximately 11-acre BTD Tow Lot is primarily owned by the City of Boston and located approximately one track mile from South Station. It is currently used for the storage of impounded vehicles and by the City of Boston Department of Public Works (DPW). Use of this site would require an easement from Amtrak and displacement of existing on-site City of Boston uses. According to the DEIR, the City of Boston identified a series of requirements for the relocation of BTD uses (e.g., greater than 20 acres, located in City of Boston, etc.). Projected impacts to DPW functions (i.e., fueling facility, salt pile, single-story garages and ramps) would require either major modifications or relocation of the DPW facility. MassDOT determined that there were no sites available that meet the City's criteria for a suitable relocation for BTD and DPW facilities. MassDOT concluded that acquisition of the BTD Tow Lot is impractical and eliminated it from further consideration. I note that recent reports indicate that this site has been identified as a potential location for a future soccer stadium or a venue associated with Boston's 2024 Summer Olympics Bid.

Readville Yard 2 Layover

Readville Yard 2 is an approximately 17.4-acre site located in the Readville section of the Hyde Park neighborhood. It is located at the intersection of the NEC and the MBTA's Fairmount Line, approximately 8.8 track miles south of South Station. This facility, owned by the MBTA, currently houses a maintenance repair facility and is the largest layover yard used by the MBTA for south side service, with a total of 12 tracks. Ten of the tracks are used for storage and two are used for switching and movement of trains. The site also contains a building with three tracks for maintenance functions.

The Tier 3 analysis indicated that Readville Yard 2 could be expanded to provide storage for an additional eight, eight-car trainsets, for a total layover capacity of 18 eight-car trainsets. Support facilities would be expanded by 11,700 sf to provide additional crew space, a support shed, and construction of a power substation. The proposed layover expansion would increase the facility by approximately seven acres. While the MBTA currently owns the majority of this area, a partial taking of approximately 0.7 acres of an adjacent privately-owned property, owned by James Grant Company, would be required.

Beacon Park Yard Layover

The BPY site is MassDOT's preferred location for a westerly located layover facility. BPY is an approximately 30 acre site located in Allston along the MBTA's Worcester/Framingham Line approximately 3.8 track miles west of South Station. Historically, this site has been used as a freight yard and intermodal terminal in Boston for CSXT, which recently relocated to central Massachusetts. BPY is currently owned by Harvard University and remains encumbered by CSXT's operating rights. According to MassDOT, an agreement in principal has been reached with Harvard University to use approximately 22 acres of BPY for a new commuter rail layover, maintenance facility and rail station.

The Tier 3 analysis indicated that BPY could provide layover space for up to 20 eight-car trainsets with 31,400-sf of support facilities consisting of a crew building, support shed, and power substation.[6] As noted previously, the potential environmental impacts associated with these proposed uses will be reviewed in conjunction with MassDOT's I-90 Allston Interchange project (EEA # 15278).

Widett Circle Layover

The Widett Circle layover facility site is located approximately one mile south of South Station. As noted in the DEIR, this site is comprised of two parcels: Cold Storage and Widett Circle. The Cold Storage parcel, located at 100 Widett Circle, is approximately 6.6 acres in area and currently houses a privately owned temperature controlled food storage and distribution facility. The building has an active rail siding served by CSX Transportation, Inc., (CSXT) with space for six freight cars. The DEIR acknowledged that a change in ownership of this site is anticipated, as plans are being advanced to convert the existing cold storage facility into a construction material recycling facility (EEA # 15070) by Celtic Recycling, LLC. Widett Circle, located at 1 and 2 Foodmart Road, is owned by the New Boston Food Market Development Corporation and is comprised of approximately 30 units leased to food processing, food storage, and food logistics businesses. I note the City of Boston's comment letter identifying Widett Circle as being located adjacent to the Dorchester Avenue corridor from Broadway to Andrew Stations as a "strategic planning area" where the City will be focusing efforts to identify a long term growth and economic plan.

The Tier 3 analysis indicated that Widett Circle could provide layover space for up to 30 eight-car trainsets and a 44,000-sf support facility including a crew building, support shed, and

[6] I note that the ENF for the I-90 Allston Interchange Project (EEA No. 15278) identified additional potential uses at this facility beyond those mentioned in the DEIR, including maintenance operations such as wheel truing and car washing.

power substation. Construction of a layover facility at this location will require the acquisition of 29.4-acres of private property, relocation of existing on-site businesses and demolition of buildings.

Land Impacts

The South Station and proposed layover facility sites are all characterized by existing urban and industrial land uses. Since these are predominantly altered areas, direct land impacts are anticipated to be limited.

The DEIR included an analysis of existing land uses and zoning at the South Station and layover facility sites. All development alternatives at South Station will require the demolition of the USPS General Mail Facility. The relocation of this facility, if pursued by the USPS, may be subject to separate MEPA review contingent upon the characteristics and location of a new facility. The South Station site is regulated by a number of City of Boston zoning and overlay districts, including but not limited to, the Flood Hazard Overlay District, the Greenway Overlay District, and the South Station Economic Development Area (EDA). The DEIR discussed project consistency with relevant planning documents applicable to the South Station site including the *Fort Point Channel Watersheet Activation Plan,* the *Fort Point District 100 Acres Master Plan,* the *South Bay Planning Study*, and the *Chinatown Master Plan.* The DEIR noted the ongoing master planning process underway by the City of Boston for the South Station/USPS area. MassDOT will coordinate with the City of Boston to ensure that the conceptual joint/private development plans will be consistent with the City's master plan and its recommendations for amendments to and refinements of current zoning.

The proposed layover facilities are located in industrially-zoned areas and are generally consistent with current zoning. The northernmost portion of the Readville Yard 2 site is located in the Neponset River Riverfront Protection Overlay District and the southern boundary is proximate to a single-family residential district. MassDOT will design this facility consistent with the zoning requirements and applicable setbacks and screening requirements.

The DEIR described how the proposed layover facilities may impact existing on-site uses. Two of the proposed layover facilities will require the acquisition of private property; Widett Circle and Readville Yard 2 and displacement of existing businesses at Widett Circle. The DEIR noted that for the construction and/or expansion of the layover facilities, required property acquisitions will be limited to the minimum footprints required to support each function, including access roads, stormwater management facilities, and employee parking area, where required.

The DEIR included a listing of known development projects (either in planning, permitting, construction phases) near the South Station and layover facility sites. The DEIR described the type and size of each project, its location, and status of review according to the BRA's Article 80 database. This summary highlights the growth trends in and around the South Station site, particularly along in the Seaport/Innovation District.

There are no designated Article 97 lands within the project area. Open space within the South Station site includes Rolling Bridge Park, a park of local significance per Section 4(f) and will be assessed as part of the project's federal review process. An existing MBTA/BRA easement (presently include the patio for 245 Summer Street) will be required in order to reopen Dorchester Avenue as a public two-way street.

Wetlands, Waterways and Tidelands

The DEIR identified the general location of wetland resource areas regulated under the Massachusetts Wetlands Protection Act (WPA) on the South Station and layover facility sites. The DEIR summarized potential wetland resource area impacts associated with the SSX project.

- South Station: wetland resource impacts include approximately 346,900 sf (7.9 acres) of 100-foot jurisdictional buffer to coastal bank and approximately 129,200 sf (2.9 acres) of land subject to coastal storm flowage (LSCSF) (100-year floodplain). The project site also contains Coastal Bank and Land Under Ocean (LUO) associated with Fort Point Channel. These resources are beneath the bridges and will not be impacted. Coastal bank is also defined by the Fort Point Channel seawall along Dorchester Avenue. Modifications to the seawall involving excavation or reconstruction are not anticipated but minor repairs to address mortar voids and shifted granite blocks may be conducted. The minor repairs would be considered maintenance activities with no impacts to resource areas of bank, land under the ocean, or land subject to tidal action.
- Widett Circle: No impacts to WPA jurisdictional resource areas are anticipated at this location;
- Readville Yard 2: wetland resource impacts include approximately 2,100 sf (0.05 acres) of Riverfront Area. The project will also impact approximately 14,200 sf (0.3 acres) of the 100-foot buffer associated with the Neponset River bank. The expansion of the layover facility will also impact approximately 9,000 sf (0.2 acre) of potential isolated wetland areas. The DEIR indicated that if this is a classified isolated wetland resource area, it is not subject to jurisdiction under the WPA.

The DEIR described how each project element will be designed and constructed in a manner consistent with relevant performance standards established in the WPA Regulations (310 CMR 10.00).

The DEIR included a discussion of existing floodplain conditions and designations per the current and preliminary Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) within a one-half mile radius of each SSX project component. At the South Station site, based on wave interaction scenarios calculated for Fort Point Channel, the 100-year flood Zone AE has varying base flood elevations. The base flood elevation for the Zone AE in Fort Point Channel is 10 feet (North American Vertical Datum of 1988 (NAVD88)) for the area south of the site boundary, beginning west of Dorchester Ave, east of South Station in Fort Point Channel, the Zone AE area has a base flood elevation of 12 feet (NAVD88), and just south of the Northern Avenue Bridge, the Zone AE has a base elevation of 13 feet (NAVD88). The South Station study area also contains an area of Zone VE, which is the flood insurance rate zone that also corresponds to the 1% annual chance coastal flood, but has additional hazards associated with storm waves. The VE area in Boston Harbor ends at the mouth of Fort Point Channel and

has a base flood elevation of 14 feet (NAVD88) immediately northeast of the Northern Avenue Bridge.

The DEIR also noted that that the majority of the South Station study area floodplain extending beyond the surface water of Fort Point Channel is developed land, consisting of roads and commercial development. The extent of the 100-year coastal flood hazard zone includes portions of the site along Dorchester Avenue between the USPS General Mail Facility/South Postal Annex and the Fort Point Chanel, and extending to the I-90 ventilation building. One additional area of 100-year coastal flood zone occurs west of and adjacent to the Fairmount Line/Old Colony Railroad Bridge over Fort Point Channel. MassDOT indicated that based on site inspections, it appears that the vertical seawall/bulkheads along the channel predominantly contain the flood waters. The seawall/bulkheads are not a consistent elevation through the site, however, and locations where the 100-year coastal flood zone encroaches upon the site correlate with seawall/bulkheads with less height.

At Widett Circle, the 100-year flood zone does not encroach upon the site boundary; the Zone AE base flood hazard elevation is 10 feet (NAVD 88). In the Readville Yard 2 study area the Neponset River contains Zone AE area that coincide with the banks of the water body.

Chapter 91

The SSX project contains both filled and landlocked tidelands as defined in 310 CMR 9.00. The DEIR included graphics identifying key c.91 jurisdictional criteria (e.g., Mean High Water Mark (MHW), Historic Mean High and Mean Low Water Marks, filled tidelands, landlocked tidelands, etc.) at South Station Terminal and layover facility sites. The MHW of Fort Point Channel was determined to be 4.63 feet above mean sea level (NAVD 88). According to the DEIR, nearly all filled tidelands in the South Station site (including South Station, the USPS facility, MassDOT Vent Building #1 and the Dorchester Avenue extension) are held in fee by the Commonwealth or a quasi-public agency or authority in trust for the benefit of the public, and therefore meet the regulatory definition of Commonwealth Tidelands. Furthermore, the DEIR indicated that the filled tidelands at the South Station site do not meet the definition of landlocked tidelands.[7]

The Dorchester Avenue extension, which separates Fort Point Channel from the existing USPS facility, is owned in fee by the USPS, but the roadway is not open to the public at large for vehicular or pedestrian use. Accordingly, MassDOT concluded that this section of Dorchester Avenue does not meet the definition of a "public way" in the c.91 Waterways Regulations and does not by itself create landlocked tidelands at the South Station site. However, the DEIR noted that in 2000, during the planning for the SSAR, the Massachusetts Legislature created a very narrow exception to the landlocked tidelands provisions of c. 91. Section 85 of Chapter 235 of the 2000 Acts of Massachusetts General Court created a special exception under c. 91 to facilitate redevelopment on air-rights above intermodal transportation facilities that would be located on landlocked tidelands, but for the abandonment of an historic public way. While the statute does not specifically identify South Station as the focus of the Massachusetts Legislature's intent, the site meets the specific geographic criteria contained therein. Therefore,

[7] Landlocked tidelands are defined as filled tidelands which are entirely separated from flowed tidelands by one or more interconnected public ways in existence on January 1, 1984 (310 CMR 9.02).

for potential air-rights development at the South Station site, this statute creates landlocked tidelands at a point 250 feet landward of the existing mean high water of Fort Point Channel. The Joint/Private Development Alternative 3 reflects these design parameters in compliance with the c.91 regulations. The Widett Circle layover facility contains landlocked tidelands. Readville Yard 2 does not contain any filled or landlocked tidelands subject to the c.91.

The DEIR summarized prior c.91 licensing for the South Station site, noting the license number, year of licensure, licensee, and authorized work. The DEIR distinguished between historic/superseded licenses and those issued for utility work in Fort Point Channel, the Central Artery/Tunnel Project, and the original South Station headhouse and track construction work. The DEIR included a description of proposed structural alterations or changes in use at the South Station site in each of the Build Alternatives (Alternatives 1, 2 and 3).

Each Build Alternative will require a new waterways (c.91) license pursuant to 310 CMR 9.05(1)(a) and (d). The DEIR provided an extensive discussion of demonstrating how each Build Alternative and layover facilities will be designed to meet the c.91 licensing criteria for a non-water-dependent (transportation improvements, joint/private development) and water-dependent (Harborwalk extension) uses. The DEIR identified the applicability of c.91 Basic Licensing Requirements for each Build Alternative and included a supporting narrative describing project compliance with specific provisions.[8] The DEIR also described project consistency with the c.91 Proper Public Purpose requirements at 310 CMR 9.31(2).[9]

As noted previously, the parameters of Alternative 2 were predicated on the constraints imposed by the c.91 regulations regarding building setbacks and height limitations. The DEIR described proposed open spaces and project elements to activate the ground-level pedestrian environment and establish Facilities of Public Accommodation (FPAs).

The DEIR discussed how the project elements located in the Massachusetts Coastal Zone (i.e., South Station terminal and Widett Circle) comply with the Massachusetts Coastal Zone Policy for the purposes of Federal Consistency Review.

Municipal Harbor Plan

The Fort Point Downtown Municipal Harbor Plan (MHP) applies to approximately 37 acres of land and water and is generally bounded by the old Northern Avenue Bridge to the north, the West Fourth Street Bridge to the south, Fort Point Channel to the east, and Atlantic Avenue and the USPS parcel to the west. According to the DEIR, Phase 1 of the MHP was approved in October 2002 and renewed in February 2013. The Phase 1 MHP is specific to the property at 500 Atlantic Avenue. Phase 2 approval was granted in March 2004 and was specific to Atlantic Wharf only. At that time, the Secretary deferred approval of the Phase 2 area south of Summer Street, which includes the USPS parcel, pending the City's completion of a master planning effort for the South Station area. The master planning effort and MHP Amendment will draw from the BRA's Watersheet Activation Plan for the Fort Point Channel area for a list of potential public benefits for development projects along the Fort Point Channel.

[8] 310 CMR 9.31(1)(i) and 310 CMR 9.32; 9.33; 9.34; 9.35(2); 9.35(3); 9.35(4); 9.35(5); and 9.36-9.40.
[9] 310 CMR 9.51; 9.51(1); 9.51(2); 9.51(3)(d); 9.52; 9.53; 9.54; and 9.55;

As noted previously, the City's master planning efforts for the South Station/USPS area is ongoing and the Joint/Private Development Alternative 3 will require an amendment to the Phase 2 Fort Point Downtown MHP. To the extent that Alternative 3 will not meet the numeric standards under 310 CMR 9.00, substitute standards, referred to as "offsets and substitutions" will be required as part of an approved MHP. Potential offset measures anticipated for Alternative 3 will be determined during the preparation of the MHP and will be subject to additional technical and regulatory review during that public process. Such offset measures may include public programming and activation of the open space areas, and additional public amenities. The DEIR also noted that while the Joint/Private Development Alternative 2 is designed consistent with the c.91 regulations, pending decisions by the City of Boston's master planning process for the project area, this development alternative may also require an amendment to the Phase 2 Fort Point Downtown MHP.

Wind and Shadow Analyses

The DEIR included an analysis of potential impacts to the public realm from wind and shadow at the South Station terminal site in compliance with the c.91 regulations. The wind analysis evaluated mean speed and gusts for the No Build and Alternative 3 Build Conditions at 80 sensors located in the vicinity of South Station to identify the potential to exceed established wind speed criteria deemed comfortable for sitting, standing, and walking. Based upon the results of this analysis, MassDOT has incorporated mitigation into Alternative 3 in the form of high coniferous trees and screen walls at the ground plain near the project buildings proposed closest to the I-90 vent building and Dorchester Avenue. These mitigation measures are preliminary in nature and will be refined when final design takes place to ensure that wind conditions are suitable at the ground level environment but demonstrate that it is possible to reduce the wind speed at these potentially sensitive locations.

The DEIR also included a shadow analysis for the following alternatives to demonstrate compliance with the c.91 regulations:

- Existing Conditions (including the No Build Alternative which includes shadow impacts from the SSAR project);
- Alternative 1 – Transportation Improvements Only;
- Alternative 2 – Joint/Private Development Minimum Build; and
- Alternative 3 – Joint/Private Development Maximum Build.

The study used a 3D CAD model of the city and standard sun altitude and azimuth data for October 23. This date is typically accepted by MassDEP and CZM for shadow studies in c.91 jurisdiction. Hourly shadows were estimated from 9:00 AM through 6:00 PM. As stated in the DEIR, the shadow analysis examined the potential impacts to the ground-level public spaces within filled and flowed tidelands focusing on public open spaces, major pedestrian areas, sidewalks and the watersheet of Fort Point Channel. For the purposes of this analysis, shadows cast by proposed buildings or other structures onto existing or proposed buildings in the vicinity of South Station were not considered impacts because they do not meet the criteria established by 310 CMR 9.51(2)(c).

The results of the shadow study identified the following impacts on public spaces:

- Alternative 1 will not create any new shadows on exterior public spaces. As a nonwater-dependent infrastructure project, Alternative 1would not be subject to 310 CMR 9.51(2)(c).
- Alternative 2 will create net new shadows lasting greater than one hour on South Station site open spaces between the joint/private development buildings for several hours, and late day shadows on the eastern shoreline of Fort Point Channel for approximately one hour, falling on sections of the Boston Harborwalk and across the Fort Point Channel. Alternative 2 will meet the c.91 standards for building height and setback and MassDOT does not expect that mitigation for these impacts will be required.
- Alternative 3 will create new shadows within the South Station site open spaces between the joint/private development buildings for a substantial portion of the day, shading each for approximately four to eight hours. Alternative 3 will also shade approximately 1,000 linear feet of the eastern shoreline of Fort Point Channel for approximately one hour late in the day. New shadows are also expected on the Fort Point Channel watersheet in the afternoon. MassDOT opined that the predicted shadows on the South Boston shoreline of Fort Point Channel are not expected to have any adverse effects on public use of these spaces because much of the surrounding areas will already be shaded.

The DEIR also noted that MassDOT does not anticipate a mitigation requirement for new shadows cast on Dorchester Avenue because the Build Alternatives will result in a substantial net benefit to public use of the waterfront. MassDOT also opined that mitigation should not be required for the predicted new shadows on the South Boston waterfront shoreline of Fort Point Channel because of the brief duration.

The DEIR included a discussion of how the project will comply with the Public Benefit Determination (301 CMR 13.00) criteria established for non-water-dependent projects located completely or partially within tidelands or landlocked tidelands. This included a discussion of: the purpose and effect of the project, impact of the project on abutters and the surrounding community, enhancement to the property, benefits to the public trust rights in tidelands, benefits provided through previously obtained municipal permits, community activities on the South Station site, environmental protection and preservation, and public health, safety, and general welfare. Key project elements consistent with the regulations include, but are not limited to, reopening Dorchester Avenue to the public, construction of an extension of the Harborwalk, and reactivation of filled tidelands through mixed-use development and expanded transit, bicycle and pedestrian access. The DEIR concluded that the project will meet the requirements of *An Act Relative to Licensing Requirements for Certain Tidelands* (2007 Mass. Acts ch. 168, sec.8) by providing appropriate public benefits and adequately protecting the public trust rights inherent to tidelands.

Climate Change Adaptation and Resiliency

As noted in the Certificate on the ENF, the project is a critical piece of infrastructure not only for the City of Boston and the surrounding region, but is key to the operation of the NEC. As a coastal city, the project has an increased susceptibility to potential damage associated with the affects of climate change, most notably sea-level rise and flooding impacts due to increased storm frequency and intensity.

I commend MassDOT for undertaking a thorough evaluation of potential climate change-induced impacts on the SSX project. The DEIR contained a discussion of potential impacts associated with four categories of concern: storm intensity and frequency; excessive heat; sea level rise, storm surge and floodplains; and hurricane surge. MassDOT noted that in addition to using an analysis of potential climate change impact to inform design elements to be implemented upon construction, this analysis will be used to ensure that the ability to make future modifications will not be precluded.

The DEIR noted the potential for increased storm intensity and frequency to result in reduced function and performance of storm drainage systems and infrastructure supported by those systems. MassDOT intends to reuse portions of existing drainage infrastructure that discharges to Fort Point Channel. These drainage systems were designed using historic precipitation records and predictive models and may not be reflective of currently changing weather patterns. MassDOT will analyze portions of the drainage system to be reused to confirm acceptability for use with evolving precipitation intensity and frequency data, and rising sea levels. The DEIR also stated that increased heat can affect tracks by the expansion of steel rail causing buckling, or possibly causing electrical component failures for devices operating outside of normal temperature conditions. These failures have the potential to cause severe public safety risks or service disruptions. MassDOT intends to consider methods of track manufacturing and installation designed to minimize the buckling effect when developing engineering plans for the SSX project.

The DEIR included an assessment of the impacts of a two-foot sea level rise upon the SSX project, which is consistent with planning for a project with a design life of 50 years, the minimum sea level rise recommended by CZM. Sea level rise will increase the height of storm surges and associated coastal flooding frequencies and permanently inundate low-lying coastal areas. To assess the project's vulnerability to flooding, floodplains in the DEIR study areas were identified using both the effective 2009 and preliminary 2015 FEMA FIRM and Flood Insurance Study (FIS). The DEIR acknowledged that FEMA's current floodplain maps are based upon existing sea levels and historical data and do not account for sea level rise. The study presented in the DEIR estimated the potential reach of future coastal flood zones due to sea level rise by determining existing ground elevations and adding a two-foot sea level rise to the existing FEMA flood elevations. The DEIR noted that this analysis that doesn't take into account changes in bathymetry effecting flooding characteristics. The DEIR included graphics depicting potential areas of inundation in a 100-year flooding event with an additional two-foot sea level rise for the South Station and layover facility sites. This analysis identified the following potential impacts:

- South Station Site - In the absence of mitigation, the 100-year floodplain would encompass approximately 38 acres of the SSX project footprint, representing nearly complete inundation of the site and infrastructure, during a 100-year flood event.
- Widett Circle - The existing 100-year flood elevation does not reach the Widett Circle layover facility site by an overland connection. However, based upon a review of mapped ground elevations at the site, the layover facility site is at or slightly below the 100-year flood elevation depicted at the southern end of Fort Point Channel. There could be risks of flooding through unknown underground connections, such as storm drainage pipes. A future two-foot sea level rise on top of a 100-year flood event would create a direct overland connection to Fort Point Channel, resulting in complete inundation of the 30 acre-layover facility.
- Readville Yard 2 - Based upon the distance of the site from the ocean, the site's elevation, and the presence of downstream dams, it is anticipated that no changes to the 100-year floodplain would occur due to a two-foot rise in sea level.

The DEIR also included an analysis of storm-based flooding scenarios, as these storms can result in water levels that far exceed those experienced during the 100-year flooding event depicted on the FIRMs. MassDOT evaluated potential project site inundation areas using Hurricane Surge Inundation Maps produced as part of a Massachusetts Hurricane Evacuation Study. These maps were produced by FEMA and the Army Corps of Engineers using the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model. The maps show areas of coastal Massachusetts that would become inundated based upon different categories of hurricanes, ranging in strength from Category 1 to Category 4. The hurricane inundation modeling for the Boston area accounts for two potential scenarios: hurricanes with tracks from south or southwest to north or northeast and those that follow a path directly toward land from offshore (from southeast or east). As noted in the DEIR, hurricanes with tracks from south or southwest to north or northeast are predicted to have lower surge levels than those with tracks from the southeast or east.

This analysis identified the following potential impacts:

- South Station Site –A Category 1 hurricane from the east or southeast will inundate portions of the South Station project footprint, including areas along Dorchester Avenue and some areas along the western site boundary. A Category 2 hurricane from the east or southeast will inundate the majority of the area within the project footprint, with the exception of northern portions of the site from the USPS facility extending west to portions of the South Station headhouse. A Category 3 hurricane from the east or southeast will encompass the entire South Station project footprint and surrounding areas, and extend approximately 1,500 feet inland from Fort Point Channel. If the hurricane paths were from the south or southwest, the South Station footprint would not become inundated by Category 1 or 2 storms. Stronger hurricanes categorized as Category 3 and 4 would inundate much of the site, leaving only the northern portions of the USPS facility and headhouse above water.
- Widett Circle – a Category 1 hurricane from the east or southeast will completely flood the layover site, along with the majority of South Boston, Back Bay, and the

Fort Point Channel area, thereby making it the most vulnerable to hurricane surges of all four SSX project sites. If the hurricane path were from the south or southwest, a Category 2 storm or stronger would completely inundate the site.

- Readville Yard 2 – Hurricane surge inundation modeling indicates that this layover facility is not at risk of surge damage resulting from any of the existing hurricane scenarios.

The DEIR included a comparative table of the types of threats (risks) associated with sea level rise or a hurricane and a range of reasonably foreseeable mitigation measures that may be appropriate to address each risk for the station and layover sites. This table also qualitatively categorized potential mitigation measures by their likely relative cost to implement.

Stormwater

The DEIR described existing and proposed stormwater management infrastructure, groundwater and surface water quality conditions within a one-half-mile radius around the South Station and layover facility sites. The DEIR also presented conceptual existing and proposed stormwater runoff rates and volumes for the 2-, 10-, 50- and 100-year storm events at South Station and layover facilities.[10]

South Station is located adjacent to Fort Point Chanel, which is part of Boston Inner Harbor. Boston Inner Harbor is included on MassDEP's *Massachusetts Year 2012 Integrated List of Waters* as a Category 5 water body and impaired for polychlorinated biphenyls (PCBs) in fish tissue, fecal coliform, enterococcus, dissolved oxygen, and other impairments. A draft Total Maximum Daily Load (TMDL) for Boston Harbor (in its entirety) has been established. Furthermore, the EPA has authorized a total of 36 combined sewer overflows (CSOs) and six NPDES permitted discharges in Boston Harbor. The DEIR identified and described seven CSOs and ten stormwater outfalls discharging to Fort Point Channel. Of the seven CSOs, three are in the immediate vicinity of the South Station site (CSO 064, CSO 065 and CSO 068). The DEIR summarized recent and ongoing efforts by the MWRA to reduce CSOs to Fort Point Channel and Boston Harbor.

The DEIR noted the elevation of each dedicated stormwater outfall, indicating that each outfall is below the highest observed water level in Fort Point Channel (9.6 feet NAVD 88). None of the dedicated stormwater outfall structures have tide gates; plans indicate that CSO 065 does. The DEIR indicated that coastal storm events could affect the functionality of the storm drain outfall to Fort Point Channel on Dorchester Avenue. The existing ground elevation at South Station varies from approximately nine to 16 feet (NAVD 88), meaning that existing "freeboard" ranges from five to 12 feet above the normal daily tidal water levels (MHW). Projected 100-year flood elevations in Fort Point Channel range from 10 to 13 feet (NAVD 88). The DEIR stated that much of the South Station site will be subjected to higher coastal storm tailwater discharge elevations than in the past, eventually returning to draining via gravity once flood levels return to normal.

[10] Preliminary drainage analyses compared Alternative 1 – Transportation Only Improvements with Alternative 3 – Maximum Joint/Private Development. The runoff rates and volumes for Alternative 2 – Minimum Joint/Private Development scenario are anticipated to be the same as those in Alternative 3.

Stormwater from the South Station parcel is collected in closed drainage systems with no associated detention, infiltration or treatment measures. Stormwater from South Station, including tracks and interlockings discharge to either dedicated stormwater outfalls or CSOs. Existing drainage from the USPS parcel, including roof runoff, collects in a closed drainage system and discharges separately from the South Station site to Fort Point Channel. Approximately 1,800 linear feet of track extending into the Cove Interlocking is located within City of Boston's Groundwater Conservation Overlay District (GCOD). However, South Station site itself is outside the GCOD, and on-site improvements do not need to comply with these requirements.

The DEIR also described existing stormwater discharges and infrastructure at each layover facility. Widett Circle is completely impervious with stormwater collected in a series of catch basins located within parking areas and along Widett Circle Road and Foodmart Road. Stormwater from catch basins is collected in a 36-inch storm drain which ties into the overflow portion of a large combined sewer that runs north and south adjacent to the facility, ultimately discharging to Fort Point Channel. There are currently no stormwater detention, infiltration, or treatment facilities at Widett Circle. Readville Yard 2 is located near the Neponset River. The Neponset River is designated by MassDEP as a Class B water and an area south of the site is included in the Fowl Meadow and Ponkapoag Bog Area of Critical Environmental Concern (ACEC). Drainage from Readville Yard 2 discharges to a segment of the Neponset River which is included in MassDEP's *Massachusetts Year 2012 Integrated List of Waters* as a Category 5 water body and impaired for dissolved oxygen, fecal coliform, turbidity, foam/flocs/scum/oil slicks, PCB in fish tissue, debis/flotables/trash, DDT, *e.coli*, and other. In 2002, MassDEP issued a bacterial TMDL for the Neponset River Watershed that includes all segments of the Neponset River. Readville Yard 2 is generally impervious. Existing ballasted tracks include underdrains that discharge via a 12-inch storm drain to the Neponset River. Other site-generated stormwater discharges to a 54-inch storm drain that crosses through the southern portion of the site. Tracks where trains are stored include drip pans which are drained to oil/water separators for treatment prior to discharge to the sanitary sewer system. Similar to Widett Circle, there are currently no stormwater detention, infiltration, or treatment facilities on-site.

Each project site will be designed and constructed in accordance with the MassDEP Stormwater Management Standards (SMS). The DEIR included a brief summary of how the project intends to comply with the SMS, as applicable. Most elements of the SSX project are expected to qualify as redevelopment projects and must meet the redevelopment standards identified in the Wetlands Protection Act regulations. Work proposed at Readville Yard 2 will be required to comply with the SMS in their entirety, as this in not categorized as a redevelopment project.

The DEIR listed non-structural and structural best management practices (BMPs), practices and procedures to mitigate project-related stormwater impacts. Potential non structural BMPs include snow removal and management measures, spill prevention; and source control. The MBTA will develop a detailed operation and maintenance (O&M) plan for each site that addresses specific BMP maintenance measures. The DEIR also described potential structural BMPs that are proposed at each project site. This list also noted those BMPs that may not be appropriate due to identified site constraints (e.g., utility conflicts, unfavorable soil conditions,

etc.,) or those that will not be required to meet stormwater management standards. MassDOT will select BMPs specifically capable of treating urban pollutants and other contributing sources to meet the applicable TMDLs established for Boston Harbor and the Neponset River.

The DEIR indicated that improvements to the existing stormwater management system at the South Station site will be designed in accordance with applicable MassDEP SMS, BWSC standards and design of the stormwater management system for tracks and platforms will be based on the MBTA *Commuter Rail Design Standards Manual.* Similar to BMPs in place at Readville Yard 2, track drainage will include track ballast underlain with a relatively impervious subgrade crowned at each track centerline and drip pans within the rack expansion area. Drip pans will be connected to an oil/water separator prior to discharge to the closed drainage system or sewer system. MassDOT intends to retain the USPS facility closed drainage system to convey roof drainage from the South Station expansion to Fort Point Channel. The existing 81-inch by 81-inch CSO (CSO 065) pipe that crosses Dorchester Avenue and the 64-inch CSO (CSO 064) pipe within Summer Street will be retained and used for drainage connections from South Station. Potential BMPs include deep sump hooded catch basins and proprietary separators to manage Total Suspended Solids (TSS).

The DEIR stated that stormwater management along Dorchester Avenue will be designed based on the MassDOT Project Development Design Guide and will meet the MassDOT Complete Streets guidelines and the City of Boston Complete Streets requirements. The DEIR included an analysis of proposed improvements demonstrating consistency with the Complete Streets initiatives. For all build alternatives, an increase in on-site pervious area is anticipated and low impact design (LID) BMPs such as pervious pavers, bioretention/rain gardens and/or tree box filters are expected to reduce stormwater runoff. The DEIR indicated that stormwater flow rates and runoff volumes at the South Station site will be reduced in all build alternatives compared to the No Build Alternative. While proposed stormwater discharges will continue to be conveyed via CSOs, MassDOT concluded that there will be no impact to the frequency or volume of overflows to the BWSC system due to the anticipated reduction in impervious area and corresponding runoff volumes. Additionally, connections associated with stormwater flows from Dorchester Avenue are expected to tie-in downstream of CSOs, resulting in no impact to the frequency and volume of overflows from the system. Stormwater management BMPs will be utilized to remove TSS and other pollutants from stormwater runoff. The DEIR noted that many BMPs may be impractical to use on-site due to site limitations and the vertical separation between Fort Point Channel and the topography of the site. No new outfalls are proposed.

Stormwater management at each of the layover sites will be designed based on the MassDOT Project Development Design Guide. Locomotive storage areas will include drip pans connected to oil/water separators for pre-treatment prior to connection to the closed drainage system or sewer system. At Widett Circle, proposed stormwater discharges will connect to the existing connection with a 17-foot by 13.5-foot BWSC CSO (CSO 070) that runs under the Widett Circle roadway and discharges into Fort Point Channel. The proposed peak flow rates and runoff volumes are projected to be lower than the No Build Alternative due to an increase in permeable area. The proposed tie-in location is beyond the overflow connection point and should result in no impact on the frequency or volume of overflows from the system. At Readville Yard 2, the existing 54-inch storm drain may need to be relocated based on the

condition of the structure. The expansion of the layover facility will result in an increase of on-site impervious area and a corresponding increase in stormwater peak flow rates. Site-generated stormwater will continue to discharge to the Neponset River via a separate stormwater system. The Readville Yard 2 expansion area will include BMPs to the maximum extent practicable to manage stormwater peak flows and water quality.

The DEIR noted that industrial activities such as those proposed at the layover facilities are regulated under the NPDES Multi-Sector General Permit (MSGP). Compliance with the NPDES MSGP is expected to include requirements such as stormwater effluent limits, monitoring requirements, and other conditions related to post-construction operations at the layover sites.

Water Supply and Wastewater

The DEIR described project-related impacts to water use and wastewater generation. The MWRA provided potable water to the SSX project area, with the BWSC servicing individual properties through its water and wastewater network. Wastewater from BWSC's system is treated at MWRA's Deer Island Wastewater Treatment Facility, which ultimately discharges to Massachusetts Bay. The DEIR did not identify any potential system capacity constraints associated with project's maximum build scenario.

The DEIR described existing water use and wastewater generation conditions at the South Station and layover facility sites, with a description and supporting graphic generally depicting the type, diameter and location of these utilities. The DEIR cited the following existing flow rates:

- *South Station* – 338,950 gallons per day (gpd) wastewater generation and 372,850 gpd water use;
- *Widett Circle* – 13,140 gpd wastewater generation and 14,460 gpd water use; and
- *Readville Yard 2* – 1,950 gpd wastewater generation and 2,150 gpd water use.

The South Station site is surrounded by water and wastewater infrastructure located in adjacent City streets. CSO 065 appears to bisect the property from west to east, located under the existing bus terminal, tracks, and the USPS facilty. The eastern part of Widett Circle is bisected by a 20-inch by 16-inch CSO line (CSO 070) and a 66-inch by 92-inch CSO line from the southeast ties into the trunk line on-site. BWSC water mains, sewers and CSOs are also located within Widett Circle and Foodmart Road. The Readville Yard 2 site contains a 10-inch water main that crosses the site to provide water service to the existing facilities and connects the neighborhood south of the site to a 12-inch water main in Truman Highway. Wastewater is discharged from the layover facility to an 8-inch separated sewer main in Wolcott Street.

The DEIR assessed potential water and wastewater impacts at the South Station site by comparing demand and generation estimates in the Maximum Joint/Private Development scenario (Alternative 3) to existing rates. These estimates were provided by use for the South Station terminal and the mixed-use development. Wastewater generation in Alternative 3 was estimated at 750,900 gpd and water demand was estimated at 826,000 gpd, an increase of 122

percent. The DEIR noted that the estimated water usage and wastewater generation at the South Station site would be partially offset by the removal of the USPS facility (22,720 gpd of wastewater and 24,992 gpd of water). Upgrades to existing BWSC water and sewer mains along Atlantic Avenue and Summer Street will be required in Alternative 3. Depending upon project sequencing in Alternative 3, new service connections may be required along Dorchester Avenue. The DEIR did not identify any additional utility connections to the existing infrastructure are part of the project. Projected increases in wastewater generation at the South Station site will require MassDOT to meet inflow and infiltration (I/I) offset requirements established by MassDEP's *Policy on Managing Infiltration and Inflow in MWRA Community Sewer Systems* (BRP 09-01) and with BWSC policy and regulations.

The DEIR indicated that the layover facilities will require sewer connections for the crew building and support shed at each site. The DEIR indicated that only light maintenance activities are proposed at the facilities. Therefore, no industrial wastewater is anticipated to be generated. Proposed wastewater generation and water demand estimates were identified for each layover facility by use type. Wastewater generation at Widett Circle was estimated at 5,850 gpd, with a water demand of 6,440 gpd. The demand estimates for the Widett Circle layover facility are less than existing uses, resulting in a decrease in wastewater generation and water use by 7,290 gpd and 8,020 gpd, respectively. Wastewater generation for Readville Yard 2 expansion area was estimated at 1,560 gpd, with an additional water demand of 1,720 gpd. Total proposed wastewater generation at Readville Yard 2 will increase to 3,510 gpd and water use will increase to 3,870 gpd. The DEIR conceptually identified potential utility tie-in connections at each layover location. At the Widett Circle site, wastewater will discharge to the existing BWSC 15-inch separated sewer in Widett Circle loop road and existing unused mains and services on site will either be removed or abandoned in place. The build condition at Widett Circle will not exceed MassDEP's requirement to provide I/I offsets. However, abandonment of existing infrastructure could reduce the amount of I/I entering the BWSC system. Water service will be provided from one or more connections to the existing BWSC water mains the Widett Circle loop road. At Readville Yard 2 proposed wastewater improvements will include new gravity services to the BWSC utilities and/or internal plumbing connections. Proposed water improvements include relocating the existing water main that bisects the site to prevent it from being covered by proposed buildings. Again, the build condition at Readville Yard 2 will not exceed MassDEP's requirement to provide I/I offsets.

The DEIR identified potential water and wastewater mitigation measures in association with the project. These include efficiency measures to meet MassDOT GreenDOT water and wastewater sustainability goals. To mitigate discharges to CSOs MassDOT intends to provide the required separation from other utilities, including site wastewater systems, when connecting new water mains and connect wastewater discharges to separated sewer systems to the maximum extent practicable. The DEIR generally identified opportunities to meet the I/I offset requirements by improving issues in Dorchester Avenue and the North End. MassDOT should coordinate with MassDEP, BWSC and the MWRA to develop an I/I plan to mitigate wastewater flows on a 4:1 basis in a hydraulically connected sewer system as design advances.

Traffic and Transportation

As noted in the DEIR, the project will provide regional and local transportation and traffic benefits: enhanced transit capacity, regionally and locally to downtown Boston; more efficient train operations; integration of the South Station rail and bus terminals; new pedestrian connections and potential for enhanced waterfront access; new bicycle accommodations; relief of curbside congestion on Atlantic Avenue; improved separation of South Station vehicle traffic and pedestrians/bicyclists; limited parking through the use of shared parking; and restoration of a key roadway connection, Dorchester Avenue.

Public Transit Services

The DEIR provided an overview of the existing and proposed regional and local transportation services utilizing South Station, including existing services, ridership, and capacity, and impacts of proposed ridership upon the public transportation system. Public transportation infrastructure relative to South Station encompasses Amtrak intercity and MBTA commuter rail service, MBTA rapid transit service, MBTA local bus service, and private carrier bus service. The transportation study analyzed project-related impacts for the following scenarios:

- 2012 Existing Condition;
- 2025 and 2035 No Build Condition;
- 2025 and 2035 Alternative 1 Condition;
- 2025 and 2035 Alternative 2, Condition; and
- 2025 and 2035 Alternative 3 Condition.

South Station currently (2012) handles approximately 128,000 daily combined Amtrak, MBTA, and intercity/commuter bus boardings and alightings.

	Amtrak	Commuter Rail	Amtrak and Commuter Rail Total	Red Line	Silver Line	Local Bus	Intercity/ Commuter Bus	Total
Existing Conditions	4,100	42,000	46,000	54,000	12,700	2,900	12,200	128,000

The current Amtrak schedule includes 10 weekday roundtrip Acela Express trains between Boston and Washington DC, nine weekday roundtrip Northeast Regional trains between Boston and Newport News, Viginia, and one weekday roundtrip Lake Shore Limited train between Boston and Chicago.

The DEIR also tabulated 2012 weekday MBTA commuter rail boardings and alightings by MBTA route:

MBTA Route	Inbound Alightings at South Station	Outbound Boardings at South Station	Total Boardings & Alightings at South Station
Fairmount Line	364	403	767
Framingham/Worcester Line	3,395	3,802	7,197
Franklin Line	2,759	3,016	5,775
Greenbush Line	1,883	1,934	3,817
Kingston/Plymouth Line	2,468	2,385	4,853
Middleborough/Lakeville Line	2,038	2,263	4,301
Needham Line	1,623	1,894	3,517
Providence/Stoughton Line	5,412	6,075	11,487
Total	**19,942**	**21,772**	**41,714**

The DEIR described potential ridership impacts using data provided by the Central Transportation Planning Staff (CTPS) and Amtrak. The 2035 travel demand forecasts provided by CTPS assume the implementation of transportation projects by 2035, consistent with the currently adopted RTP of the Boston Region Metropolitan Area Planning Organization (MPO). MassDOT also adjusted the CTPS data to include projected Silver Line Gateway ridership, as this is not in the current RTP, and ridership growth on intercity and commuter bus routes, as these are not in tabulated in the CTPS model, expansion of Amtrak intercity rail service, and the South Coast Rail commuter rail extension to New Bedford. I note that while the SSAR project will expand bus terminal capacity, no specific future year plans for the existing private bus carriers were available for use in the analysis. Therefore, intercity/commuter bus service levels were assumed to remain constant between the 2012 Existing Condition and the 2035 Build Alternatives. The analysis also considered pedestrian transfers between modes within South Station using CTPS transfer matrices. These ridership data were provided for each analyzed scenario by transit type (e.g., Amtrak, MBTA Red Line, MBTA local bus, etc.) in the years 2025 and 2035.

2025 Daily Combined South Station Boardings and Alightings:

Joint/Private Development Alternative	Amtrak	MBTA Commuter Rail	Amtrak and Commuter Rail Total[a]	MBTA Red Line	MBTA Silver Line	MBTA Local Bus	Intercity/ Commuter Bus	Total[a]
Existing Conditions	4,100	42,000	46,000	54,000	12,700	2,900	12,200	128,000
No Build Alternative	5,200	53,000	58,000	68,000	22,800	3,600	12,700	165,000
Alternative 1	8,100	65,000	74,000	70,000	23,200	3,600	12,500	183,000
Alternative 2	8,100	66,000	74,000	70,000	23,200	3,700	12,700	183,000
Alternative 3	8,100	67,000	75,000	72,000	23,600	3,800	13,100	187,000

2035 Daily Combined South Station Boardings and Alightings:

Joint/Private Development Alternative	Amtrak	MBTA Commuter Rail	Amtrak and Commuter Rail Total[a]	MBTA Red Line	MBTA Silver Line	MBTA Local Bus	Intercity/ Commuter Bus	Total[a]
Existing Conditions	4,100	42,000	46,000	54,000	12,700	2,900	12,200	128,000
No Build Alternative	5,500	56,000	61,000	72,000	25,600	3,800	12,800	175,000
Alternative 1	9,300	72,000	81,000	74,000	26,100	3,800	12,600	198,000
Alternative 2	9,300	72,000	81,000	75,000	26,200	3,900	12,800	199,000
Alternative 3	9,300	74,000	83,000	77,000	26,700	4,000	13,300	203,000

As indicated by these ridership forecasts, significant increases in ridership across all modes are anticipated in the No Build Alternative. Additional ridership in the Build Alternatives is directly attributable to the increased transit service facilitated by the expansion of South Station and the air rights development.

The DEIR assessed the impacts of increased ridership at South Station in the Build Alternatives upon future capacity of the MBTA's commuter rail, rapid transit, and local bus routes. This analysis included an assessment of existing and proposed station and platform capacities at South Station and key stations within the MBTA's system's downtown core (i.e., Park Street, Downtown Crossing, State Street, and Government Center). Existing and projected ridership demands for each alternative scenario were compared to available vehicle capacities per the MBTA's *Service Delivery Policy*, the parameters of which were summarized in the DEIR.

Increased ridership on rapid transit or local bus routes attributable to the project is not expected to result in additional crowding impacts that exceed the *Service Delivery Policy* maximum load beyond those already identified in the No Build Alternative. All 2035 Alternatives (No Build and Build), will result in loading on the Silver Line 4 and Silver Line 5 Bus Rapid Transit (BRT) routes anticipated to exceed *Service Delivery Policy* capacity. The DEIR noted that projected overcrowding on the Silver Line 4 and Silver Line 5 routes, however, is due to growth in the No Build Alternative, such as forecasted growth in population, households, and employment, as well as changes in land use and transit services, including increased frequencies on the Fairmount Line and the proposed Silver Line Gateway project, and is not a result of the SSX project.

For commuter rail, the DEIR indicated that 2035 Build Alternative passenger loading on the outbound Canton/Stoughton/South Coast Rail Line is projected to exceed the *Service Delivery Policy's* acceptable level of crowding during the peak evening hour. However, more than sufficient capacity to accommodate the projected passenger load demands will be available within the entire three-hour evening peak period. Adjustments to train schedules could be made to shift peak period trains into the peak hour to mitigate this potential overcrowding.

The DEIR concluded that project-related ridership increases at stations in the downtown core will be imperceptible. At these stations, additional daily boardings and alightings due to the

Build Alternatives are projected to result in a less than one percent increase above 2035 No Build Alternative conditions.

The DEIR included an analysis of pedestrian circulation LOS for the 2012 Existing Condition, the 2035 No Build Condition and the 2035 Alternative 3 Condition. Pedestrian LOS during peak hour ridership periods was evaluated for existing and new commuter and intercity rail platforms, passenger waiting areas adjacent to existing and new platforms (rail head concourse), vertical circulation elements (stairs and escalators), and existing Red Line and Silver Line platforms. This analysis considered the types and locations of trains arriving at South Station (i.e., number of passengers, track location, passenger circulation routes, platform width and length, etc.) in assessing LOS, assuming worst-case scenario to ensure an assessment of maximum potential impact.

This analysis identified worsening LOS compared to the No Build Condition on the existing at-grade commuter and intercity rail platforms in Alternative 3 with poor LOS (LOS E/F) occurring more frequently in Alternative 3 due to the increased number of trains and ridership. Vertical circulation LOS in Alternative 3 is projected to be slightly worse than the No Build Condition, but an acceptable LOS (LOS D) or better is maintained throughout the morning and evening peaks periods. The project will increase pedestrian flows at South Station, with a projected two to four percent increase in daily Silver Line platform activity and an up to six percent increase in passenger activity on South Station's Red Line platforms compared to 2035 No Build Conditions. Compared to the No Build Alternative, Alternative 3 is projected to result in a slightly reduced LOS on the Red Line (LOS D or better) and Silver Line (LOS C or better) platforms during the morning and evening peak hours.

Traffic

The DEIR included a Traffic Impact and Access Study (TIAS) prepared in accordance with EEA/MassDOT Guidelines for EIR/EIS Traffic Impact Assessments. The study area intersections were selected in coordination with the BTD and the BRA.

The study area intersections for the South Station site included the following 21 intersections that were chosen due to their proximity to South Station and the likelihood that they might be affected by the project:

1. Congress Street / Dorchester Avenue
2. Summer Street / Dorchester Avenue
3. Atlantic Avenue / I-93 On-Ramp / Seaport Boulevard
4. Atlantic Avenue / Congress Street
5. Purchase Street / Congress Street
6. Atlantic Avenue / Summer Street
7. Summer Street / Purchase Street / Surface Road
8. Atlantic Avenue / Essex Street
9. Surface Road / Lincoln Street / Essex Street
10. Atlantic Avenue / East Street
11. Atlantic Avenue / Beach Street
12. Kneeland Street / Atlantic Avenue / Frontage Road / I-90 Off-Ramp

13. Kneeland Street / Lincoln Street
14. Kneeland Street / Surface Road
15. South Station Connector / Lincoln Street / I-93 On-Ramp / I-90 and I-93 HOV Ramp
16. Surface Road / South Station Connector
17. Dorchester Avenue / West 2nd Street
18. Dorchester Avenue / West Broadway
19. Dorchester Avenue / West 4th Street
20. Purchase Street / Seaport Boulevard / Oliver Street / I-93 Off-Ramp
21. Congress Street / A Street / Thompson Place

The study area intersections for the layover facility sites include:

1. Frontage Road / Widett Circle Access Road (Widett Circle Layover Facility Site)
2. Widett Circle / Widett Circle Access Road (Widett Circle Layover Facility Site)
3. Hyde Park Avenue / Neponset Valley Parkway / Wolcott Court / Wolcott Square (Readville-Yard 2 Layover Facility Site)
4. Wolcott Court / Layover Driveway (Readville-Yard 2 Layover Facility Site)

The DEIR described existing roadway infrastructure and existing and proposed intersection conditions. MassDOT performed data collection and modeling analyses of intersection operations within the study area and presented intersection and roadway traffic volumes, LOS, volume to capacity ratios and 95th percentile queue lengths for the 2012 Existing Condition, 2025 and 2035 No Build Conditions and 2025 and 2035 conditions for each Build Alternative (Alternatives 1, 2, and 3) in the DEIR. The DEIR summarized known development projects and annual growth rate projections incorporated in to future year (2025 and 2035) analyses. For the Build Alternatives, projected trip generation rates were estimated using the ITE Trip Generation Manual and adjusted to account for mode split, vehicle occupancy, and internal capture per guidance from MassDOT, CTPS, and BTD. Layover facility intersection capacity analyses were identical in each Build Alternative (Alternatives 1, 2, and 3), as layover operations, and resultant traffic generation will not change. To determine if there are existing safety concerns for vehicles, pedestrians or cyclists at study area intersections, MassDOT reviewed the most recently available crash data and compared these rates to MassDOT District 6 averages. All intersections within the study area are below the average crash rate for District 6.

The DEIR indicated that under Existing Conditions (2012) South Station generates approximately 5,400 average daily trips (adt), including 3,400 curbside trips along Atlantic Avenue, 1,400 passenger vehicle trips to/from the high occupancy vehicle (HOV) parking deck, and 600 bus trips to/from the bus terminal.

MassDOT conducted a curbside queue study that indicated that the existing layout along Atlantic Avenue creates curbside congestion at certain peak times of the day, with curb space not meeting peak demand. The DEIR identified the following key issues that contribute to curbside congestion:

- Curbside drop-off/pick-up and taxi activity utilizing the first available curbside slots, leaving the dedicated passenger drop-off/pick-up area adjacent to the bus terminal underutilized;

- Taxis and passenger vehicles using the no stopping zones for curbside drop-off/pick-ups. These no stopping zones are located within intersections along Atlantic Avenue;
- The number of taxis staging for passenger pick-ups in the taxicab pick-up zone (Zone 7) exceeds the dedicated curb capacity and results in the taxis spilling into the street and blocking travel lanes;
- Poor signage, both for wayfinding and designating curbside uses;
- Articulated Silver Line 4 buses takes very wide turns from Essex Street onto Atlantic Avenue impacting traffic flow by requiring the bus to use the entire Atlantic Avenue/Essex Street intersection to maneuver; and
- Frequent jaywalking across Atlantic Avenue.

Furthermore, Atlantic Avenue's one-way street pattern creates circuitous routes to South Station curbside from downtown, resulting in drop-off and pick-up activity in Dewey Square, within the Essex Street intersection, and at the intersection of Summer Street and Dorchester Avenue. The project directly addresses the curbside issues by reopening Dorchester Avenue as a public way and shifting a substantial portion of demand to this roadway segment. The cross-section of the newly opened Dorchester Avenue will accommodate curbside activity along the length of the new headhouse on the southbound side of the newly opened street. This curb space will be designed to accommodate taxicabs, drop-off, pick-up, MBTA buses, and shuttles – providing significant relief of Atlantic Avenue amounting to a 30 percent to 40 percent reduction in curbside traffic. Reopening Dorchester Avenue will also improve traffic flow in the area by absorbing a portion of traffic from A Street, Atlantic Avenue, and Summer Street. These traffic shifts help relieve congestion on these roadways and also create more direct vehicular trips on less congested roadways which benefits regional air quality. In Alternatives 2 and 3, a new service road will be constructed linking the back of the expanded station with the South Station Connector, the existing elevated roadway linking Surface Road and Lincoln Street with the bus terminal and parking deck, providing an additional route for taxicabs and pick-up/drop-off activity to and from I-90 and I-93.

I note that many study area intersections will continue to operate poorly (LOS E or F) in all 2025 and 2035 alternatives (No Build and Build) in the morning and evening peak periods, typical of a downtown environment. The DEIR included a comparative table of these intersection capacities.

Alternative	AM Peak Hour Overall Intersection Capacity		PM Peak Hour Overall Intersection Capacity	
	LOS D or better 2025/2035	LOS E or LOS F 2025/2035	LOS D or better 2025/2035	LOS E or LOS F 2025/2035
No Build Alternative	14/11	7/10	11/9[a]	10/12
Alternative 1	15[a]/13[a]	6/8	12/11	9/10
Alternative 2	15[a]/13[a]	6/8	10/9[a]	11/12
Alternative 3	14[a]/13[a]	7/8	9[a]/9[a]	12/12

[a] The overall LOS rating applies with the exception of one approach, which operates at a lower LOS.

Pedestrian and Bicycle Accommodations

MassDOT conducted pedestrian and bicycle volume counts within the Study Area, noting key routes of travel by each mode. The DEIR also summarized South Station monthly Hubway use for the three most active periods (August, September, and October) and the most popular origin and destination docking stations for South Station Hubway trips.

The reopening of Dorchester Avenue prioritizes pedestrian and bicycle accommodations on the Fort Point Channel side of the roadway, separated from the vehicular curbside activity at the new station headhouse on Dorchester Avenue. MassDOT will extend the Harborwalk by approximately one-half mile along the entire stretch of the Fort Point Channel, closing the last remaining gap in creating a continuous waterfront walkway with seating and landscaping in Downtown Boston. The project includes construction of an approximately one - half mile long new cycle track along Dorchester Avenue that is buffered from traffic and parallel to the newly created pedestrian Harborwalk along the Fort Point Channel. The proposed cycle track will connect with existing bicycle infrastructure and is consistent with future plans by the City, including the South Bay Harbor Trail and the Summer Street Corridor cycle track. The DEIR included a discussion, with existing and proposed conditions graphics demonstrating how public realm improvements will meet Complete Streets Guidelines and provide substantial improvements to pedestrian and bicycle accommodations within the area surrounding South Station.

There are existing Hubway stations in the area on Dorchester Avenue at the end of the South Bay Harbor Trail and on Atlantic Avenue which are anticipated to complement the new cycle track. The project will provide an opportunity to expand Hubway services by creating a second docking location on the east side of South Station. Finally, the new terminal headhouse will include covered, secure bicycle storage facilities.

Traffic Mitigation Measures

The DEIR proposed numerous traffic mitigation measures for build Alternative 1 and Alternatives 2 and 3.

The Proposed roadway mitigation in Alternative 1 includes the following:

- Provide dedicated curbside space for taxicab, passenger drop-off, passenger pick-up, and shuttles along the reopened portion of Dorchester Avenue to address excessive curbside congestion along Atlantic Avenue.
- Remove Atlantic Avenue parking meters. As a near-term mitigation that can be implemented immediately, curbside congestion on Atlantic Avenue would be reduced by eliminating the six parking meters along Atlantic Avenue at Kneeland Street and reprogramming the curb to accommodate drop-off or taxicabs.
- Improve bicycle accommodations on Atlantic Avenue by providing a bicycle lane along the west side of Atlantic Avenue from Kneeland Street to Essex Street.
- Implement intersection upgrades at the following locations to improve traffic flow, reduce queuing, and improve pedestrian and bicycle mobility:

- Atlantic Avenue at Summer Street –implement adjustments to lane assignments and signal timing/phasing. These adjustments include:
  - Restriping the Atlantic Avenue northbound approach, eliminating the shared left-turn/though lane and providing diagonal crossing markings in the intersection;
  - Adding a crosswalk on the westbound approach of the Summer Street/Purchase Street intersection to better accommodate the pedestrian desire line from South Station to Dewey Square;
  - Improving concurrent pedestrian phase timings at Summer Street/Purchase Street intersection to adequately accommodate pedestrians; and
  - Optimizing all intersection signal splits and offsets.
- Purchase Street at Summer Street –add a crosswalk across Summer Street to improve pedestrian crossing.
- Summer Street at Dorchester Avenue – Reopening Dorchester Avenue results in added delays on Dorchester Avenue northbound. Proposed mitigation includes optimizing signal timing and phasing and incorporating bicycle-specific signal equipment, pavement markings, and detection into the intersection layout.
- Surface Road/Essex Street/Lincoln Street – provide additional walk time through pedestrian lead intervals during the concurrent pedestrian phases; install a new crosswalk along the southern east-west crossing from Essex Street to the large median; and optimize the signal timings and splits.
- Congress Street at Dorchester Avenue – optimize signal timing and phasing and increase the pedestrian/bicycle phase to provide adequate clearance time for pedestrians and bicyclists to cross during the exclusive phase.
- Atlantic Avenue at Kneeland Street/Frontage Road/I-90 Off-Ramp – update the MBTA access drive loop detection with the ability to skip the phase if there is no vehicle present and update and optimize intersection phases, splits and offset.
- Dorchester Avenue/West Broadway/Traveler Street – change pedestrian operations to concurrent pedestrian phases, per BTD guidelines and modify the West Broadway westbound approach lane configuration to one left/through and one through/right to better accommodate the vehicle movement onto Traveler Street.
- Dorchester Avenue/West 4th Street – optimize the signal timing splits and offset with Dorchester Avenue/West Broadway/Traveler Street intersection and add concurrent pedestrian walk time.

Alternatives 2 and 3 will require additional roadway mitigation measures to offset the vehicle traffic and parking needs associated with the Joint/Private development. Under these alternatives, all roadway mitigation measures proposed for Alternative 1 will be required, plus the following:

- Implement intersection upgrades at the following locations to improve traffic flow, reduce queuing, and improve pedestrian and bicycle mobility:
  - Atlantic Avenue at Seaport Boulevard – adjust signal timings to improve the Seaport Boulevard approach.
  - Atlantic Avenue at Congress Street – optimize signal timing and phasing.

- Purchase Street at Congress Street – optimize signal timing and phasing.
- Atlantic Avenue at Kneeland Street/Frontage Road/I-90 Off-Ramp – install a new loop detection on the MBTA driveway so driveway phase can be skipped.
- Lincoln Street at the South Station Connector – implement signal timing changes.
- Surface Ramps at the South Station Connector – implement signal timing changes.
- Atlantic Avenue at Congress Street – adjust signal timings to improve the Congress Street approach.
- Atlantic Avenue at Summer Street – adjust and optimize signal timings; eliminate northbound double left conflict.
- Kneeland Street at Lincoln Street - adjust offsets between adjacent intersections for better vehicle progression to minimize queuing.
- Surface Road at Kneeland Street – adjust offsets between adjacent intersections for better progression.

MassDOT has not proposed any traffic mitigation measures at the layover facilities for any of the Build Alternatives, as facility-related traffic trips are expected to be minimal and not contribute to the degradation of intersection traffic.

Transportation Demand Management

The DEIR described the components of a Transportation Demand Management (TDM) program associated with each Build Alternative. TDM measures proposed as part of Alternative 1 include:

- Incorporate bicycle parking in the new headhouse on Dorchester Avenue;
- Construct one-half mile of the Harborwalk adjacent to Fort Point Channel;
- Improve pedestrian connections around and through the South Station site to the neighboring communities of the Leather District, Chinatown, the Downtown/Financial District, and the South Boston Waterfront/Innovation District;
- Provide electronic signage displaying transit schedule information;
- Incorporate curbside space and a shuttle stop for private shuttles along Dorchester Avenue;
- Allow for Hubway to expand its bike share program onto the reopened Dorchester Avenue, and do not preclude an expanded Hubway station in the roadway design phase;
- Work with the City of Boston to improve bicycle accommodations along Atlantic Avenue from Kneeland Street to Summer Street; and
- Participate in the U.S. EPA SmartWay Transport Program to increase energy efficiency and reduce greenhouse gas emissions.

In addition to the TDM commitments proposed in Alternative 1, TDM commitments proposed in Alternatives 2 and 3 include:

- Accommodate electric vehicle charging facilities within the structured parking;

- Charge market rates for off-street parking spaces used by single occupant vehicle (SOV) drivers; and
- Provide car sharing parking (Zipcar or similar program) and carpool/vanpool designated parking spaces in any structured parking facilities.

Monitoring

MassDOT has committed to work with the BTD to conduct a post-development traffic monitoring program. The program will be conducted prior to the start of construction of each phase and repeated six months after the issuance of occupancy certificates.

Air Quality

The project will generate air quality impacts associated with emissions generated by locomotives entering and leaving the South Station terminal and layover facilities, intercity buses from South Station terminal, and vehicular traffic. The DEIR assessed potential project-related air quality impacts utilizing several components: an area-wide impact assessment, which consisted of calculating area-wide project-related pollutant emission inventories; a carbon monoxide (CO) Hot Spot analysis; a particulate matter ($PM_{2.5}$) Hot Spot analysis, an analysis of Mobile Source Air Toxics (MSATs); an assessment of NO_2 concentrations; an assessment of Air Quality Conformity; and an assessment of construction period impacts.[11] MassDOT met with MassDEP prior to the preparation of the DEIR, subsequent to which MassDEP approved the air quality assessment approach for the DEIR. The air quality analysis methodology was comprehensively described in the DEIR.

The DEIR described existing air quality conditions for National Ambient Air Quality Standards (NAAQS) criteria pollutants at the South Station and layover facility sites. The NAAQS, established in conjunction with the federal Clean Air Act (CAA), include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2) and lead (Pb). Massachusetts is currently in compliance with the 2008 8-hour ozone standard statewide, with the exception of Dukes County. FRA activities must comply with EPA's General Conformity Rule (40 CFR 51 Subpart W). The air quality analysis presented in the DEIR was prepared to demonstrate compliance with the General Conformity Rules.

The DEIR identified project-related criteria pollutants (VOCs, NO_x, PM_{10}, $PM_{2.5}$, CO and SO_2) at the South Station site for a number of scenarios for comparative purposes. These scenarios included:

- 2012 Existing Conditions;
- 2025 No-Build, Alternative 1, and Alternative 3 Conditions; and
- 2035 No Build, Alternative 1, and Alternative 3 Conditions.[12]

[11] MSATs are emitted in both gaseous and particulate form from other vehicles, locomotives, and non-road construction equipment.

[12] MassDOT determined that air quality impacts for Alternative 2 would only be evaluatedif violations were predicted for Alternative 3. Violations are not anticipated, so Alternative 2 was not analyzed.

At the layover sites, MassDOT evaluated impacts relative to the No Build and Build Alternative (i.e., Alternative 1). These scenarios were used for each element of the air quality analysis.

Existing regional emissions were provided by source type (i.e., locomotives, motor vehicles, and buses). The analysis demonstrated that the SSX project will not lead to new exceedances of the NAAQS. Decreases in pollutant emissions in the vicinity of South Station are anticipated between 2012 and 2025 due to significant reductions in EPA-mandated pollutant emission factors. Small increases in pollutant emissions in the vicinity of South Station are anticipated between 2025 and 2035 due to the relatively small reductions attributable to EPA emissions factors and an increase in growth of traffic and train volumes. With the exception of SO_2 emissions (increase of 0.02 tons per year), all evaluated criteria pollutant emissions at the South Station site will decrease between the 2012 Existing Condition and the worst-case 2035 Alternative 3 Condition. The analysis identified small increases in pollutant emissions at the layover facilities due to the project, particularly in locations where no layover facilities currently exist, but these will not lead to exceedances of the NAAQS. No mitigation measures are proposed in conjunction with the Build Alternatives for criteria pollutant impacts.

The DEIR included a CO hot spot analysis in accordance with EPA procedures and in consultation with MassDEP. At the South Station site, this analysis evaluated the worst four study area intersections based on LOS analysis, total traffic volume, and geographic coverage. The single worst-case intersection was evaluated for each layover site. All of the studied intersections currently experience maximum 1-hour and 8-hour CO concentrations below corresponding federal and State standards in the existing condition and all future development alternatives. The analysis predicted decreases in CO concentrations in the No Build and Build Alternatives compared to existing conditions due to the projected decrease in motor vehicle CO emissions rates. No mitigation measures are proposed at any of the study area traffic intersections for CO impacts.

A $PM_{2.5}$ hot spot analysis was conducted following EPA's December 2010 guidelines and focused only on the emissions from diesel trains and motor vehicles. The results of this analysis indicated that all modeled 24-hour and annual $PM_{2.5}$ concentrations were well below National and Massachusetts $PM_{2.5}$ standards in all years and alternatives evaluated.

The DEIR air quality analysis consisted of a qualitative comparison of potential project-related MSATs developed using estimates of VOCs and $PM_{2.5}$ emissions as a MSAT surrogate for each SSX alternative. This analysis concluded that in 2025 and 2035, MSATs in Alternative 1 would increase just over 2 percent from the No Build Alternative and MSATs in Alternative 3 would increase just over 4 percent from the No Build Alternative.

According to the DEIR, the project area and the entire state of Massachusetts, is in attainment of the NO_2 standards; therefore, a modeling analysis for NO_2 is not required for this project. However, in response to the scope, the DEIR completed a localized impact assessment of NO_2 emissions using dispersion modeling to disclose potential harmful health effects of transportation-related pollutants emitted by the increase in rail operations due to the increase in the number of railroad tracks at South Station. The analysis concluded that all of the modeled 1-

hour and annual NO_2 concentrations were well below the National and Massachusetts NO_2 standards for all future years and alternatives evaluated.

MassDOT evaluated the potential impacts of diesel particulate matter (DPM) and ultrafine particles (UFPs) in association with the project. According to the DEIR, there are no regulations for either pollutant at the federal or State levels which contain air quality standards, and sufficient data are not available to accurately conduct a quantitative assessment of emissions from the project alternatives. Instead, the DEIR included a qualitative assessment of DPM and UFP emissions in the vicinity of South Station. DPM emissions are anticipated to follow trends of $PM_{2.5}$ emissions from diesel fueled sources. Using $PM_{2.5}$ emissions as a proxy, for each project year Alternative 1 is predicted to produce more DPM emissions than the No Build Alternative and Alternative 3 is predicted to produce more DPM emissions than both the No Build Alternative and Alternative 1. To assess potential impacts from UFPs, the DEIR used fuel consumption in the vicinity of South Station as a surrogate. Similar to DPM emissions, for each project year Alternative 1 is predicted to produce more DPM emissions than the No Build Alternative and Alternative 3 is predicted to produce more UFP emissions than both the No Build Alternative and Alternative 1.

The DEIR described emissions from locomotives and the potential use of locomotive technologies to provide additional air quality benefits to the region or layover and station facilities on a localized level. For the purposes of this assessment, MassDOT assumed that all MBTA trains on the South Coast Rail line and Amtrak trains on the NEC route (Acela and regional) are electric, and all other MBTA commuter rail trains and Amtrak trains on the Inland and Lake Shore Limited routes are diesel powered.

According to the DEIR, EPA's Locomotive Exhaust Emission Standards set upper limits for pollutant emissions based upon the date a locomotive engine is manufactured or remanufactured. These standards limits are categorized in Tiers, with Tier 0 applying to engines manufactured between 1973 and 1992; Tier 1 applying to engines manufactured between 1993 and 2004; Tier 2 applying to engines manufactured between 2005 and 2011; Tier 3 applying to engines manufactured between 2012 and 2014; and Tier 4 standards applying to engines manufactured in 2015 or later. The 2012 Existing Conditions scenario assumed that the typical MBTA locomotive (a F40PH-2C) is in compliance with Tier 1 standards and the typical Amtrak locomotive is in compliance with Tier 0 standards.[13] The 2025 and 2035 No Build and Build Alternatives assumed that all locomotives are in compliance with Tier 4 standards. This assumption is based on MBTA and Amtrak fleet management plans indicating that the existing fleets will be replaced or rebuilt by 2025 and required to meet Tier 4 standards. Between Tier 1 and Tier 4 emissions reductions are estimated at 82 percent for NO_x, 96 percent for PM, and 75 percent for hydrocarbons.

Amtrak trains along the NEC are electrified; existing MBTA trains and Amtrak inland routes continue to run on diesel. MassDOT is not planning any system-wide electrification processes now or in the foreseeable future (with the potential exception of the current Preferred Alternative for the SCR project) due to current financial and logistical limitations. However, the project will not preclude the possibility of installation of electrified rail, as the project will

[13] This assumption is based on the diesel locomotives that run on the Lake Shore Limited route. The NEC is electrified.

include clearance and right-of-way designs that will accommodate future electrification infrastructure. Plug-in facilities (shore power) are currently in place at Readville Yard-2. MassDOT will incorporate plug-in facilities at all proposed layover facilities.

Noise and Vibration

The DEIR included a noise and vibration study performed in accordance with the FTA's *Transit Noise and Vibration Impact Assessment* guidance manual. In addition to federal noise and vibration criteria, the DEIR also used the City of Boston Noise Ordinance to assess potential construction period noise impacts. Construction period impacts are discussed in greater detail later in this Certificate. MassDOT collected existing noise levels at the South Station and layover facility sites for both residential and non-residential sensitive receptors and described the primary sources of existing noise (e.g., current layover operations, commuter rail service, etc.).

The DEIR compared predicted noise levels at each noise-sensitive receptor location in the 2035 Build Alternatives with the FTA noise criteria and the estimated change (i.e., increase or decrease) in peak hour noise levels between 2013 and 2035. Train operations were assumed to be the same for all three 2035 Build Alternatives (Alternatives 1, 2, and 3); train operations noise modeling results for Alternative 1 were used in the noise assessment for Alternatives 2 and 3. To determine train-related noise, MassDOT considered train operations by type (diesel or electric locomotive powered), time of day, trainset sizes, location by track number, the presence of intervening noise barriers of buildings, and ground attenuation effects. The analysis indicated that noise impacts from Alternative 1 will occur at a receptor location across the Fort Point Channel (at Necco Street, approximately 950 feet away from the nearest track). The DEIR concluded that due to the removal of the USPS facility, a direct sound propagation path will be created to this sensitive receptor, exceeding the FTA moderate impact criteria. The analysis also identified a moderate impact to 245 Summer Street during the peak-hour noise level (Leq) due to an increase in idle time for Amtrak locomotives at the north end of the station near the building. The joint/private development projects in Alternatives 2 and 3 are expected to entirely enclose the station area and thereby eliminate potential noise impacts to 245 Summer Street and Fort Point Channel. Noise levels inside South Station may increase by 3 to 5 dBA in the 2035 Alternatives 2 and 3, depending on the reverberation characteristics of the enclosed space.

The potential noise impacts at the layover facilities were modeled using a worst-case scenario assuming that all added trains (e.g., 30 trainsets at Widett Circle and 8 trainsets at Readville Yard 2) arrive or leave the facility during the same midday peak hour. Noise impacts at Widett Circle are not projected to exceed FTA criteria as the nearest noise sensitive receptors located along Albany Street are approximately 1,300 feet from the acoustic center of the site. Midday peak hour noise levels at Readville Yard 2 are expected to exceed the FTA moderate impacts criterion at identified residential receptors on Wolcott Street and Riley Road.

The DEIR identified potential noise mitigation measures for the South Station site in Alternative 1 and at Readville Yard 2. At South Station under Alternative 1, MassDOT would install a noise barrier between the easternmost track and Dorchester Avenue to reduce the day-night average sound level (Ldn) across the Fort Point Channel. This noise barrier will be constructed to extend at least three feet above the height of the locomotives to reduce noise

levels by approximately 10 A-weighted decibels (dBA). A noise barrier will also be installed between the building at 245 Summer Street and the train station to reduce the peak-hour Leq levels. At Readville Yard 2, MassDOT will extend the existing noise barrier and berm between the layover facility and Wolcott Street to include the layover facility expansion area. The noise barrier will also be extended to provide noise mitigation to the apartment buildings along Riley Road.

Existing conditions vibration measurements were obtained at four locations at the South Station site: the South Station headhouse; the east side of South Station near Track 13; the west side of South Station near Track 1; and at 245 Summer Street, a building immediately adjacent to the site that operates vibration-sensitive computer equipment in its basement. FTA surface vibration curves were used to predict ground-borne vibration and ground-borne noise levels from transit operations. According to the DEIR, because of the slow speeds at which trains operate when entering and leaving South Station (10 mph or less), typical vibration levels are below the FTA impact criterion of 72 velocity decibels (VdB) for human annoyance. MassDOT conducted a detailed indoor and outdoor vibration measurement assessment at 245 Summer Street using enhanced vibration-monitoring equipment for measuring indoor vibration levels. This analysis identified vibration levels below 60 VdB at a distance of 75 feet from the closest track. These levels are below the FTA outdoor criterion of 65 VdB for buildings with vibration-sensitive equipment. The interior vibration measurements indicated that existing vibration adjacent to the sensitive equipment is due to the mechanical equipment located in the basement and not the trains at South Station. Similar to South Station, trains entering and exiting the layover facilities will operate at low speeds. Therefore, no vibration measurements were conducted at the proposed layover facilities. Potential vibration impacts associated with track switches and crossovers are not anticipated at Widett Circle and Readville Yard 2, as nearby residential receptors are located greater than 130 feet from the switches and thereby assumed to meet the FTA vibration criteria.

Greenhouse Gas Emissions

The DEIR included a GHG analysis prepared in compliance with the MEPA Greenhouse Gas Policy and Protocol ("the GHG Policy"). The GHG Policy requires projects to quantify carbon dioxide (CO_2) emissions and identify measures to avoid, minimize or mitigate such emissions. The GHG analysis quantified the direct and indirect CO_2 emissions associated with the project's energy use (stationary sources) and transportation-related emissions (mobile sources). The GHG analysis estimated stationary source emissions for two project alternatives; Alterative 1 – Transportation Improvements Only and Alternative 3 – Joint/Private Maximum Build.

The GHG analysis evaluated CO_2 emissions for two scenarios as required by the Policy including 1) a Baseline Case and 2) a Mitigation Case. The Baseline Case is designed to meet the Massachusetts Building Code, 9th Edition, with amendments (2012 International Energy Conservation Code (IECC), ASHRAE 90.1-2010), while the Mitigation Case contains energy efficiency design measures in order to meet the anticipated revisions to the Stretch Energy Code

(Stretch Code) as it may be amended in mid-2015 or later.[14] MassDOT met with staff from the MEPA office and the Department of Energy Resources (DOER) prior to performing the GHG analysis to confirm modeling assumptions and methodology and provide clarity on the DEIR scope.

As noted in the DEIR, the City of Boston has adopted the Stretch Code subsequent to its designation as a Green Community under the provisions of the *Green Communities Act of 2008*. Therefore, the project will be required to meet the applicable version of the Stretch Code in effect at the time building permits are sought. The Stretch Code increases the energy efficiency code requirements for new construction (both residential and commercial) and for major residential renovations or additions in municipalities that adopt it. Compliance with the Stretch Code is demonstrated through modeling of energy use for larger buildings, while smaller buildings (less than 100,000 sf) may follow a selected set of "prescriptive" requirements for particular energy efficiency measures. MassDOT intends to meet Stretch Code requirements for the layover facility sites through prescriptive energy measures. As such, no modeling was included in the DEIR.

Direct stationary source CO_2 emissions include those emissions from the facility itself, such as boilers, heaters, and internal combustion engines. Indirect stationary source CO_2 emissions are derived from the consumption of electricity, heat or other cooling from off-site sources, such as electrical utility or district heating and cooling systems. Mobile CO_2 emissions include those emissions associated with vehicle use by employees, vendors, customers and others, and in the case of this project, diesel trains. The GHG Policy requires proponents to use energy modeling software to quantify projected energy usage from stationary sources and energy consumption and mobile source modeling software to predict transportation-related emissions. MassDOT used eQUEST modeling software to assess stationary source emissions and data gathered in conjunction with the study area air quality analysis to determine mobile source CO_2 emissions from locomotives, automobiles/trucks and buses. Emissions factors for automobiles, buses and trucks were determined from references cited in the GHG Policy. Fuel consumption and emissions rates for locomotives were obtained from EPA's *Locomotive Emissions Standards* EPA-420-R-98-101 (April 1998).

The DEIR provided a general summary of proposed building mitigation measures, mostly focusing on HVAC, lighting, envelope and process categories for the various types of proposed uses (e.g., terminal expansion, hotel and multi-family high-rise. The current preliminary project design does not include modifications to, or ventilation connection with, the existing South Station facilities. The stationary source GHG analysis estimated project-related CO_2 emissions at the South Station site as follows:

- Alternative 1 Baseline = 2,387 tons per year (tpy);
- Alternative 1 Mitigated = 2,192 tpy;
- Alternative 3 Baseline = 7,634 tpy; and
- Alternative 3 Mitigated = 6,736 tpy

[14] MassDOT anticipates that a new Stretch Code (SCII) will be proposed, effective mid-2015 or later. It is anticipated that SCII will require energy use to be between 12 and 15 percent below the baseline of the 2012 IECC requirements.

The reductions in Alternative 1 between the Baseline and Mitigated Conditions were estimated at 195 tpy, or 8.2 percent. The reductions in Alternative 3 between the Baseline and Mitigated Conditions were estimated at 898 tpy, or 11.8 percent. These estimates do not include the potential GHG benefits of renewable energy sources, discussed in further detail later in this section of the Certificate.

The DEIR indicated that depending upon final ownership arrangements, MassDOT may lease space to tenants. In this case, certain energy efficiency measures and operational practices may be implemented during tenant fit-out rather than as part of MassDOT's core and shell design. Tenants would require City of Boston permits for fit-out and will therefore be required to comply with the applicable Stretch Code provisions. The DEIR included a conceptual Tenant Manual with recommendations and requirements for tenant fit-out. The Tenant Manual will require or encourage a commercial tenant to:

- Use variable frequency drives in HVAC distribution systems;
- Reduce lighting power densities in office spaces below Code;
- Design electric wiring and systems compatible with the application of Energy Management Systems and automated lighting controls;
- Use EnergyStar-rated appliances, if available;
- Participate in the state-wide Green Initiatives Recycling Program;
- Implement recycling of construction waste; and
- Promote employee participation in the TDM program.

The DEIR included a calculation of the Energy Use Index (EUI) using United States Energy Information Administration (EIA) Commercial Buildings Energy Consumption Survey (CBECS) EUI values as a benchmark for the EUI resulting from modeling both the Base Case and Build with Improvements scenarios. The DEIR compared the modeled building's EUI to those averages presented in the CBECS. Baseline and Mitigated Case EUIs were generally better than the CBECS averages, with the exception of the terminal building. This discrepancy is most likely due to operational differences between the terminal building and the "public assembly" category identified in the CBECS.

The GHG analysis also evaluated the potential use of on-site renewable energy sources such as wind power, solar or photovoltaic (PV) panels, ground-source heat pumps (GSHPs), district steam energy, and combined heat and power (CHP). Wind turbines and GSHPs were dismissed as potential energy sources for the project due to airspace or below ground conflicts. The DEIR also noted that installation of significant amounts of on-site electric generating capacity may not be feasible due to likely electrical connections through spot networks rather than a radial distribution system. If South Station were served by spot network vaults, any interconnected distributed energy source would be limited to $1/15^{th}$ of the minimum facility load to prevent excess power from flowing into the network and tripping the network protectors in the vault. This type of connection would also require use of inverter-based equipment. The DEIR concluded that a spot network would preclude all but the smallest on-site CHP systems and would limit PV systems.

A PV capacity analysis was completed using shadow data collected for the South Station site. This shadow analysis identified approximately 70,000 sf of available roof space for solar panel in Alternative 1 and 25,000 sf of available roof space in Alternative 3. The PV capacity analysis assumed that 50 percent of these total roof areas will be impacted by shadows, reducing the effective area available for panel placement to 35,000 sf in Alternative 1 and 12,500 sf in Alternative 3. Alternative 1 could accommodate a 420-kW system (an annual output of 462 MWh), while Alternative 3 could accommodate a 150-kW system (an annual output of 165 MWh). The analysis estimated potential GHG savings and financial feasibility for each PV system assuming both third-party and MassDOT-owned ownership models and State and federal incentives. Third party ownership modeling was determined to be more favorable with shorter payback periods (8 or 9 years). Estimated GHG reductions include 166 tpy in Alternative 1 and 59 tpy in Alternative 3. The PV analysis also estimated thermal generation capabilities for solar hot water (SHW) heating. Alternative 1 was estimated to generate about 42,000 therms per year, offsetting 245 tpy of CO_2, while in Alternative 3, a thermal PV system could generate about 15,000 therms per year, offsetting approximately 88 tpy of CO_2.

The DEIR also identified potential GHG reductions associated with connecting South Station to the existing Veolia district energy system. Steam heat from the facility could be used for domestic hot water production year-round, for building heat during the cooling season, and for power steam-driven absorption chillers for summertime air conditioning. The DEIR noted that using steam from this facility to reduce GHG emissions would be dependent upon the source of steam and the extent of energy losses associated with transmission from Veolia's Kneeland Street Plant and South Station. Veolia uses both CHP systems and conventional boilers to generate steam in this district energy system, the source of which could either provide CO_2 savings or incur a higher CO_2 burden. MassDOT will continue to evaluate renewable energy sources in the FEIR.

The DEIR included a quantification of estimated GHG impacts associated with water and wastewater conveyance and treatment for Alternative 3, the worst-case scenario for development of South Station. In Alternative 3, water-related GHG emissions were estimated at 11.9 tpy and wastewater-related GHG emissions were estimated at 70.3 tpy. Water and wastewater-related GHG emissions for the layover facilities were not calculated per the GHG Policy, as they will not generate flows in excess of 300,000 gpd.

Mobile Sources

Mobile source emissions were evaluated impacts from all transportation sources in the immediate South Station area and locomotive impacts from travel to and from the layover facility sites. The South Station area assessment estimated CO_2 emissions associated with motor vehicles and buses on affected roadways within the project study area and railroad locomotives entering, idling, and leaving South Station in the 2012 Existing Condition, 2025 and 2035 No Build Conditions and 2025 and 2035 Build Condition for Alternatives 1 and 3. These emissions were summarized by type (i.e., locomotives, motor vehicles, intercity buses, and total). The DEIR described various assumptions regarding locomotive type, schedules, throttle notch and fuel rates incorporated into the analysis. I note that the GHG analysis did not tabulate indirect

emissions from Amtrak's electric locomotive service. The FEIR will be required to evaluate these impacts.

The locomotive impacts traveling to and from the layover facilities to the Tower 1 Interlocking were estimated for the 2012 Existing Condition, the 2025/2035 No Build Alternatives and the 2025/2035 Build Alternatives.[15] Layover facility operations were assumed to remain unchanged between 2025 and 2035. The DEIR presented assumptions related to train operations, idling times, and trip length to determine CO_2 emission from both idling and moving trains.

The DEIR also provided net project-related local emissions estimates for 2035 Build Alternatives 1 and 3 and compared project-related emissions to the 2035 No Build Alternative by type (i.e., motor vehicles near South Station, intercity buses near South Station, locomotives near South Station, and locomotives to/from layover sites). These net project-related CO_2 emissions were estimated at 15,467 tpy for Alternative 1 and 15,679 for Alternative 3. These results indicate that the bulk of emissions are generated from trips to and from the layover facilities, with modest reductions (733 tpy) achieved by SSX itself due to reduced congestion and idling time. Emissions totals do not account for the use of electric plug-in facilities which will further reduce locomotive idling emissions and proposed roadway intersection improvements which will reduce vehicle idling and congestion.

Sustainability

The DEIR provided an overview of MassDOT's GreenDOT Policy, a policy designed to promote sustainable economic development; protect the natural environment, and enhance the quality of life in the Commonwealth. Many of the sustainability measures proposed in accordance with the project, including the project's ability to enhance transit service will contribute to reductions in GHG emissions and further the Commonwealth's efforts mandated by the Global Warming Solutions Act and the Commonwealth's transportation mode share goals. The DEIR summarized the project elements' (i.e., headhouse, terminal tracks, Dorchester Avenue, and layover facilities) consistency with the GreenDOT implementation plan.

Historic and Archaeological Resources

The DEIR included an evaluation of the impact of the SSX project on historic architectural and archaeological resources. According to the DEIR, the evaluation of existing conditions and related assessments were conducted in conjunction with the Massachusetts State Historic Preservation Office (SHPO)/MHC, in accordance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR Part 800), as amended, the implementing regulations of the Advisory Council on Historic Preservation (36 CFR 800), and State Register Review procedures (950 CMR 71.00).

In accordance with Section 106, MassDOT established Areas of Potential Effects (APEs) for the South Station site and each proposed layover location. As noted in the DEIR, following

[15] These estimates include trips to all three layover facilities, Widett Circle, BPY and Readville Yard 2 in a worst case scenario (i.e., 30 trains using Widett Circle, 20 trains using BPY, 18 trains (8 new) using Readville Yard 2).

its review of the technical report prepared for the project – *Historic Architectural Resources Technical Report* (October 2014) - MHC concurred with the identification and evaluation of findings, including the APEs.

The DEIR listed historic resources within the South Station APE and noted whether they were listed in the National and/or State Registers of Historic Places (the Registers) or included in the *Inventory of Historic and Archaeological Assets of the Commonwealth* (the Inventory). The following resources are listed on the Registers:

- Fort Point Channel Historic District;
- Leather District;
- Russia Wharf Buildings; and
- South Station Headhouse.

The Commercial Place Historic District and the Fort Point Channel Landmark District are listed in the State Register of Historic Places. The following resources are listed in the Inventory:

- Chester Guild, Hide and Leather Machine Company;
- Chinatown District;
- Federal Reserve Bank of Boston;
- Kneeland Street Steam Heating Plant;
- South End Industrial Area;
- Keystone Building;
- Weld Building;
- USPS General Mail Facility/South Postal Annex;
- MBTA Operations Center Power Substation;
- 245 Summer Street; and
- Gillette.[16]

The DEIR noted whether or not properties listed on the Inventory were recommended as National Register-eligible.

The Widett Circle and Readville Yard 2 APEs do not contain historic buildings or structures listed in the Registers. The Widett Circle APE also does not contain any properties listed in the Inventory. A portion of the Readville Yard 2 APE is located within the Readville Industrial Survey Area, which contains two properties listed in the Inventory: Standard Oil Company Depot Complex and Frank Kunkel & Son Hammered Forgings. Previous evaluations of these properties were not recommended as being eligible for the National Register.

The DEIR discussed potential project-related noise and vibration impacts to historic architectural resources. This assessment was expanded in the South Station APE to include potential shadow, wind, and visual impacts. At Widett Circle train operation noise impacts are

[16] The Gillette facility had not been previously surveyed, but MassDOT prepared an inventory form as part of the historic architectural technical report.

predicted to be below FTA impact criteria, construction period noise levels are predicted to not exceed FTA construction noise limits and new vibration will not impact historic properties. Noise impacts are predicted to occur at residences along Wolcott Street and Riley Road, but these impacted properties are not identified as historic properties. Construction period noise levels are not predicted to exceed FTA construction noise limits and new vibration at each site will not impact historic properties within the APE.

Impacts to historic architectural resources associated with the project may be unavoidable. MassDOT will continue to work with MHC and interested parties, such as the Boston Landmarks Commission, to develop appropriate mitigation measures to minimize or mitigate impacts to historic resources.

The DEIR included an assessment of potential impacts to historic resources in the South Station APE for each development alternative (Alternatives 1, 2, and 3). Potential noise, vibration and shadow impacts and proposed mitigation were described previously in this Certificate. The assessment concluded that no adverse visual impacts on historic architectural resource are expected under any development alternative.

MassDOT established archaeological APEs in accordance with Section 106 for the South Station and layover facility sites. The boundary of the APEs for archaeological resources is limited to the area of direct impact for construction activities. MassDOT conducted archival research and a visual field survey to locate and identify visible archaeological sites and sensitive areas where potentially significant belowground resources may be present and affected by the project. This information was used to establish sensitivity rankings (low, moderate, and high) within the SSX archaeological APEs. According to the DEIR, areas assigned moderate or high sensitivities are typically subjected to subsurface testing as part of an intensive (locational) archaeological survey to locate and identify potentially significant sites. The DEIR concluded that given the historic disturbance and use of each APE, assignment of archaeological sensitivity rankings were not warranted. MassDOT recommended no further archaeological investigations associated with the SSX project.

Hazardous Materials

The DEIR provided a summary of potential contamination and hazardous materials issues associated with the South Station and layover facilities sites. The DEIR indicated that MassDOT anticipates encountering some form of contamination as part of project construction given the historic uses within the project area. MassDOT reviewed MassDEP files for assigned Release Tracking Numbers (RTNs) under the Massachusetts Contingency Plan (MCP) (310 CMR 40.0000). The DEIR identified 22 instances of historic release or threat of release into the environment at the South Station site; all RTNs have achieved closure. The DEIR described each RTN and remedial action outcomes (RAOs) and the presence of Memoranda of Understanding (MOUs) or Activity and Use Limitations (AULs). The DEIR acknowledged that initial evaluation of the USPS facility identified the presence of asbestos-containing material (ACM) and other potential sources of hazardous material (e.g., lead paint, mercury-containing equipment, etc.) The DEIR identified 14 instances of historic release or threat of release into the environment at the Widett Circle site; all RTN's have achieved closure. None of the RAOs have

AULs associated with them. Site evaluations of the buildings at Widett Circle have yet to be completed. Finally, the DEIR identified two instances of historic release or threat of release into the environment at the Readville Yard 2 site. One RTN has been closed, while the other, RTN 3-15991, remains open. Site evaluations of the buildings at Readville Yard 2 have yet to be completed.

The open RTN has achieved a Class C-2 RAO, indicating that a condition of No Substantial Hazard exists, but response actions to achieve a Permanent Solution are feasible and required. While this RTN is generally located east of the proposed layover facility, the DEIR indicated that portions of the release site extend onto MBTA/Commonwealth of Massachusetts-owned property. An AUL is proposed that would require maintenance of a geotextile and gravel cover to address residual lead and PCB soil contamination. The proposed remedy may require approval from the EPA. The DEIR noted that site remediation would be an alternative to placement of an AUL on-site.

Construction activities at BPY and Readville Yard 2 could require remediation in compliance with the MCP. The Readville Yard 2 work will require oversight from a Licensed Site Professional (LSP) in conjunction with the Soil Management Plan.

Construction Period

The DEIR described potential construction period impacts associated with the SSX project and outlined proposed mitigation measures to be implemented during the project's construction staging and sequencing. As the project will be undertaken while maintaining rail service to South Station, MassDOT will coordinate rail-related construction activities with the operating railroads including the MBTA and its commuter rail operator, Amtrak, and CSXT. Non-rail-related construction activities will be coordinated with the City of Boston, utility companies, and other public and private entities as necessary. MassDOT envisions that the design of the joint development will be prepared by a private developer, and thus construction-related impacts associated with this portion of the project were not included in the DEIR.

The DEIR included a draft Construction Management Plan (CMP), a draft Construction Waste Management Plan (CWMP) and a potential construction schedule identifying timeframes and durations for various stages of construction activities. The construction schedule assumed the construction of the SSAR project concurrent with the demolition of the USPS facility, with its completion prior to SSX construction. The DEIR described a general construction sequencing plan, with anticipation that construction work at the South Station site and the layover facility sites could advance independently. The layover facility construction is expected to have minimal impact on train operations. The DEIR identified an opportunity to investigate coordination and combination of rail systems' planned maintenance activities with the proposed construction activities to minimize disruptions to train operations.

The DEIR described potential construction period air quality, noise and vibration, site contamination and hazardous material, and utility impacts. The DEIR discussed the proposed content of a CMP designed to include measures to avoid, minimize, and mitigate these aforementioned construction period impacts. The CMP will include construction traffic

management plans (TMPs) for each work zone, prepared in coordination with BTD, to ensure safe vehicular, bicycle, and pedestrian access to South Station and manage traffic within the project study area. The CMP will also include an emissions control plan to address impacts associated with fugitive dust and construction equipment and vehicle exhaust. The DEIR identified potential BMPs and mitigation measures that may be used by the contractor to manage construction-related emissions.

The demolition and construction activity associated with the project is expected to impact the building at 245 Summer Street and the South Station headhouse. While the DEIR indicated that these noise levels are not anticipated to exceed FTA construction noise limits, they are expected to exceed the City of Boston's construction noise limits. Vibration levels are not expected to result in structural damage to nearby buildings, but may exceed FTA human annoyance criterion. A Noise Control Plan will be incorporated into the CMP that includes construction period noise monitoring to determine compliance with FTA and the City of Boston noise limits and methods to mitigate construction-related noise levels, if necessary (e.g. noise barriers of appropriate height, length and location). Vibration measures will be obtained inside the building located at 245 Summer Street to ensure that construction equipment vibration levels do not exceed vibration-sensitive equipment specifications. The DEIR identified a variety of additional noise and vibration control BMPs that may be selected by the contractor.

During construction, dewatering may be required if groundwater is encountered during excavation or if surface water ponds in temporary BMPs or other areas. MassDOT will obtain appropriate permitting approvals from MWRA, MassDEP, or BWSC, as necessary to ensure proper management and disposal of dewatering effluent. MassDOT acknowledged the presence of a BWSC CSO under the USPS facility, indicated that it will employ BMPs to maintain the structural integrity and provide outlet protection of this CSO, including access for continued inspection and maintenance.

Construction at South Station and each layover facility site will require the preparation of a Stormwater Pollution Prevention Plan (SWPPP) in accordance with NPDES Construction General Permit requirements. The SWPPP should identify potential pollutant sources and describe BMPs to be employed for erosion and sedimentation control, temporary stormwater management, dust control, and site stabilization consistent with MassDEP's *Stormwater Handbook* (2008) and MassDOT's *Stormwater Handbook for Highways and Bridges* (2010).

MassDOT will develop contract specifications to ensure consistency with MassDOT's GreenDOT Implementation Plan requirements and project sustainability goals. The DEIR identified the following potential sustainability contract specifications: green fleet encouragement, temporary wood reuse, material purchase location and logistics, recycled paving materials, low-emitting materials, and pest management. Other recycling initiatives may include reuse of granite, recycled content in track-work items, use of reclaimed material, use of alternatives to Portland Cement, and/or use of recycled steel items. Contract specifications will also be developed requiring monitoring and proper utilization of water in the construction process, including measures to minimize losses and encourage reuse. Recycle and recovery apparatus will be required for operations such as dewatering, slurry installations, and drilled caissons.

The project will require the preparation of a CWMP. The project will generate a variety of solid waste associated with building demolition, new and modified track work, and building construction. During preliminary design, MassDOT will conduct a Hazardous Building Material Evaluation at each SSX project site to identify any recognized hazardous building materials. MassDOT will include specifications in project contracts addressing the handling and disposal of asbestos and asphalt, brick and concrete (ABC) in accordance with MassDEP regulations. MassDOT intends to evaluate all materials that leave SSX project site for possible reuse or recycling capabilities, the potential hazardous nature of the material, and final disposal location in accordance with MassDEP regulations. The construction contracts will contain requirements for contractors to maximize the amount and value of materials recovered from the construction and demolition site, including implementing source separation, deconstruction, and other material reuse practices. These contract documents will be written to comply with the goals of the *Massachusetts Solid Waste Plan.*

MassDOT will conduct Phase 1 Environmental Site Assessments (ESAs) at the South Station and layover facility locations. Pending the results of these Phase 1 ESAs, Phase II subsurface investigations may be required to evaluate subsurface contamination and inform the final construction period protocols for managing oil and hazardous materials (OHM), including compliance with the Massachusetts Contingency Plan (MCP) regulations (310 CMR 40.0000).

SCOPE

General

The FEIR should follow Section 11.07 of the MEPA regulations for outline and content, as modified by this scope. The FEIR need not duplicate information provided as part of the DEIR if it remains unchanged as part of the final project presented in the FEIR or is not critical to the evaluation of scope items identified below.

A primary purpose of the scope of the DEIR is to identify alternatives for analysis. Several comments request that the scope for the FEIR be expanded to include additional alternatives that would represent a significant increase in the scope of review and incur substantial additional costs for design, permitting and construction (i.e., study relocation of the headhouse to 245 Summer Street or require MassDOT to advance the NSRL). I decline to expand the scope of the FEIR to incorporate these requests.

Project Description and Permitting

The FEIR should include a detailed description of the project and describe any changes to the project since the filing of the DEIR. The FEIR should include updated site plans, if applicable, for existing and post-development conditions at a legible scale (80-scale or larger) for the South Station Site, Widett Circle and Readville Yard 2. These conceptual plans should include not only on-site work, but any proposed off-site work associated with transportation improvements. The FEIR should include plans at a legible scale clearly depicting each

interlocking (Interlocking 1, Cove and Broad) that will be modified as part of SSX. These graphics should depict existing conditions at each interlocking, environmental or property ownership constraints that may influence their final design, and proposed modifications to trackwork. The FEIR should discuss how the preferred interlocking design will eliminate or reduce delays in a scenario where a locomotive becomes disabled within its trackwork.

If updated ridership projections are available, the FEIR should summarize these changes and discuss how they may affect the overall project. The FEIR should address comments regarding the perceived discrepancy between increases in track layout capacity and future ridership projections.

I note that the No Build and each Build Alternative evaluated in the DEIR assumed the construction of the SSAR project. It is unclear how the project design may be impacted if SSAR does not proceed prior to construction of SSX. The FEIR should include a discussion of how platform lengths, headhouse and concourse circulation and access from the surrounding neighborhood may be altered and how this may affect final project design.

As noted previously, the environmental impacts associated with the BPY layover facility will be reviewed in conjunction with the I-90 Allston Interchange project (EEA # 15278). The FEIR should include an update on the status of this project's funding, design, and MEPA review. If the I-90 Allston Interchange project does not advance in a timely manner and MassDOT wishes to commence use of BPY in a manner beyond that specifically authorized in its agreement with Harvard University, a Notice of Project Change (NPC) may be required for the SSX project.

The FEIR should include an updated discussion of permitting requirements associated with the project and how the project will be constructed in accordance with applicable regulatory performance standards.

Alternatives

The FEIR must include a selection of a Preferred Alternative. This Preferred Alternative should include both South Station improvements (i.e., platforms and track layout, interlocking upgrades, conceptual headhouse design, Dorchester Avenue improvements, and bicycle, pedestrian and intersection improvements) and selected layover facility locations. The FEIR should include the results of the Tier 2 terminal track configurations screening alternatives. The FEIR should describe each modeled alternative, how it will meet Amtrak and the MBTA's future service plans, meet project OTP and delay goals, and allow parallel moves between Tower 1 Interlocking and the terminal. These alternatives should be evaluated based on their impacts to existing infrastructure, construction staging, capital and maintenance costs, and operations with respect to accommodating and coordinating with other SSX project elements, including the station and midday layover facilities, and the SSAR project. The FEIR should clarify how freight operations were incorporated into the evaluation of future service plans and access to and from the layover facilities.

The FEIR should also include an assessment of platform capabilities and berthing abilities, including the number of platforms accessible to each track. The FEIR should note if platforms will not meet established MBTA and Amtrak requirements for longer trainsets. If these standards cannot be met, the FEIR should identify which tracks and platforms will be affected and how this may impact future operations and service capabilities. MassDOT should provide an additional analysis of innovation mechanisms to extend platform lengths. The FEIR should identify which tracks/platforms may implement these techniques and estimated extension lengths. Selection of these techniques should be coordinated with project stakeholders, the FRA, Amtrak and the MBTA.

The FEIR should include a preferred South Station design alternative. The FEIR should describe how the conceptual design is consistent with MassDOT's station design principles, project purpose and need, and established performance objectives. The FEIR should also present a preferred joint/private development alternative, based upon ongoing financial and real estate feasibility analyses.

The FEIR should include an expanded assessment of preferred layover facility operations based upon various combinations and capacities at Widett Circle, BPY, and Readville Yard 2 to support the selection of a Preferred Alternative that meets the project's layover needs. This Preferred Alternative should be informed by the screening analysis, potential environmental impacts, and system operational requirements. This layover facility alternatives analysis should consider how each potential facility will operate and meet expected operational needs either individually or in conjunction with other proposed facilities once integrated into the larger rail system (Amtrak, MBTA, freight) that connects to South Station. The FEIR should specifically address how the location and operations at any of the potential layover facility sites will impact Main Line services for Amtrak, the MBTA and freight services due to necessary train dead-heading and midday storage requirements. The FEIR should also clearly identify proposed maintenance or other rail-related operations that will be undertaken at each layover yard. These activities, and their potential environmental impacts (e.g., industrial wastewater generation, noise impacts), should be accurately reflected in the environmental analyses prepared by MassDOT. The FEIR should clarify is these activities were assumed in the DEIR, and if not, revise analyses accordingly in the FEIR.

The FEIR should include a phasing plan that addresses sequencing and timing of the potential layover facility sites based on operational need. This analysis should consider what available storage capabilities are presently afforded, or could be implemented in a No Build Alternative, to MassDOT at these facilities, noting that use of the layover facility at BPY is subject to an agreement with Harvard University.

I note that the DEIR indicated that public outreach to the residents surrounding the Readville Yard-2 layover facility has yet to be undertaken. MassDOT, in a collaborative effort with the City of Boston, should expand its public outreach specifically to these residents prior to selection of a Preferred Alternative. I expect that the City of Boston will assist MassDOT in facilitating these efforts. Furthermore, the FEIR should include an update on outreach efforts to property owners and potentially displaced business owner at Widett Circle, as the land takings to accommodate this potential facility should inform the determination of a Preferred Alternative.

As part of the FEIR, I encourage MassDOT to consider additional ways to reduce impacts to environmental resources through design modification or the addition of features to further mitigate potential impacts. Additional recommendations provided in this Certificate may result in a modified design that enhances the project's ability to avoid, minimize, or mitigate Damage to the Environment. The FEIR should discuss steps MassDOT has taken to further reduce the impacts of the project since the filing of the DEIR, or, if certain measures are infeasible, the FEIR should discuss why these measures will not be adopted.

The FEIR should describe the interrelationship of the Preferred Alternative with the SSAR project. While each alternative assumes the completion of the SSAR, this project's funding and construction schedule is beyond MassDOT's control. Therefore the FEIR should provide additional analysis of how proposed platform lengths, column placement, passenger waiting areas, and passenger access points are reliant on either action to be undertaken by SSAR or MassDOT and discuss contingencies in MassDOT's Preferred Alternative design if SSAR does not proceed prior to the SSX project.

Land

The FEIR should identify the extent of proposed land takings associated with the project at Widett Circle and Readville Yard 2. The FEIR should characterize the existing conditions on these properties and demonstrate that takings have been limited to the extent practicable given MassDOT's proposed programming needs. The FEIR should discuss MassDOT's legal and regulatory obligations associated with private property takings and describe how MassDOT intends to meet these requirements going forward with the Preferred Alternative.

The FEIR should identify the extent and location of known easements, particularly those associated with water and sewer infrastructure, within the SSX project area. The FEIR should clarify how these easements may impact project construction and operations, and ensure ongoing access to these utilities by the MWRA and/or BWSC for maintenance.

Traffic and Transportation

The FEIR need not include an updated traffic analysis, unless the Preferred Alternative substantively deviates from the Alternatives evaluated in the DEIR with respect to anticipated traffic generation. However, MassDOT should reevaluate the feasibility of additional intersection mitigation measures to further reduce the number of intersections in the study area that currently, or in the future, operate at LOS E and F. If additional mitigation is not proposed, the FEIR should discuss why mitigation measures are infeasible. The FEIR should update proposed TDM measures, traffic-related elements of the proposed CMP, or other relevant traffic mitigation measures as necessary to reflect final design elements of the Preferred Alternative. The FEIR should provide additional data supporting the assumption that approximately 30 to 40 percent of South Station-bound traffic trips will be diverted to a reopened Dorchester Avenue in the Build Alternatives. The FEIR should include graphics identifying proposed routes to and from South Station from key roadways and locations such as South Boston, I-93 north, I-93 south, and the MassPike.

The FEIR should also include conceptual plans at a legible scale for any proposed transportation improvements that clearly identify lane widths, expanded areas of pavement or removal of medians/open space, traffic signals, pedestrian, bicycle, and transit accommodations. This information is necessary to confirm that adequate area is available to ensure the viability of proposed infrastructure improvements and transportation mitigation measures.

The FEIR should include detailed conceptual plans for Dorchester Avenue that clearly indicate the location of and describe available curbside capacity for taxi cabs, MBTA buses, shuttle services, and passenger vehicle drop-off and pick-up. The FEIR should discuss how curbside drop-off/pick-up areas will be accessed and designed to avoid conflict with bus operations, pedestrians and bicyclists. The FEIR should describe how a reopened Dorchester Avenue may be used to reroute MBTA buses to provide more direct bus connections to downtown.

Public Transit

The FEIR should demonstrate that the preferred South Station design will mitigate existing or potential areas of congestion and poor pedestrian LOS, including projected pedestrian congestion on at-grade rail platforms, within the rail head concourse, and connections to the Silver Line and Red Line platforms in the Build Alternatives. MassDOT noted in the DEIR that it will consider the potential for an elevated intercity and commuter rail concourse level that facilitates mid-platform boarding and alighting during normal operations, thereby reducing the overall congestion level on the platforms and concourses.

As noted previously, the project scope will not be expanded to include the NSRL. However, the FEIR should discuss the current planning (State and federal) and funding status for the NSRL and provide additional detail on how the Preferred Alternative will be designed to ensure that its future construction is not precluded. This discussion should include how platform, concourse, headhouse and circulatory routes may be incorporated into potential future access to additional subterranean tracks, or at a minimum, will not preclude construction of future tunnels and support structures.

Pedestrian and Bicycle Accommodations

MassDOT should continue to refine pedestrian and bicycle connection plans between South Station and adjacent streets, the Harborwalk, and through and around South Station to the adjacent neighborhoods (i.e., Fort Point Channel, Seaport District, South Boston, Chinatown, Leather District, etc.). The FEIR should clearly identify these routes and accommodations (e.g., bicycle lanes) and note how the design of the South Station headhouse will enhance these connections. The FEIR should provide additional detail on the conceptual sizing and location of the proposed long-term and short-term bicycle parking, including the anticipated number of bicycle parking spaces based upon mode-share data for South Station.

Transportation Monitoring

The FEIR should clarify elements of the proposed monitoring program, including the types of data to be evaluated, frequency of monitoring, steps to provide further mitigation if anticipated operations and mode share splits are not achieved, and distribution of the reports. As suggested by the Metropolitan Area Planning Council (MAPC), I recommend that MassDOT commit to conducting a monitoring program for all Build Alternatives (Alternatives 1, 2, and 3).

Wetlands and Waterways

The FEIR should identify the location and type of wetlands resource areas on the South Station and layover facility sites, delineated in accordance with the WPA and describe how the project will be constructed in accordance with applicable wetland resource area performance standards. The FEIR should clarify the jurisdiction of the potential isolated vegetated wetland on the Readville Yard 2 site. If alteration of this wetland requires a 401 WQC, the FEIR should discuss how MassDOT will meet the 401 WQC regulations and any applicable performance standards.

The FEIR should discuss the outcomes of the master planning process required in the MHP Phase 2 Decision and the subsequent anticipated MHP Amendment, providing details on the plan components, the design parameters established by the MHP Amendment, public outreach efforts, and other plan aspects. It is anticipated that the master planning process and the MHP Amendment will draw from the City's Fort Point Channel Watersheet Activation Plan that was completed in 2002 to provide a menu of public benefits for development projects along the channel. As noted by the City of Boston and CZM, the Amendment to the MHP must be approved by the EEA Secretary prior to the submission of the FEIR.

The FEIR should include conceptual design plans, graphics and a supporting narrative for the Preferred Alternative that details the location of uses within the building on tidelands and facilities dedicated for public use consistent with c.91 regulatory requirements and/or the MHP Amendment, as applicable. The FEIR should include an updated discussion demonstrating how the South Station site will be designed to meet the c.91 licensing criteria for a non-water-dependent (transportation improvements, joint/private development) and water-dependent (Harborwalk extension) uses.

As noted by CZM, the Alternative 3 shadow analysis performed to demonstrate compliance utilized a preliminary building massing concept. The actual layout of the buildings may change as the development of the site progresses from conceptual to actual. Therefore, to assess all possible shadow impacts of the maximum build out, during the MHP Amendment process, a shadow analysis should be completed using the full envelope of possible Alternative 3 build out. This shadow analysis will result in more shadow impact than would be possible under an actual design, but it will show all of the possible locations where shadow might occur and how much impact is possible with any particular arrangement of buildings at the maximum height. This analysis should be provided for reference in the FEIR.

The SSX project does not currently include a water transportation connection. The FEIR should discuss the feasibility of extending water taxi service to South Station. The DEIR noted that non-navigable portions of Fort Point Channel are located north and south/southwest of the

South Station site, but do not include that portion of the channel directly east of South Station. According to the DEIR, the ACOE has deferred final determination of the navigability status of Fort Point Channel at the South Station site, pending further review. The FEIR should discuss how this determination may impact potential water transportation access to the South Station site.

The FEIR should include an updated discussion of how the project complies with the Public Benefit Determination (301 CMR 13.00) criteria established for non-water-dependent projects located completely or partially within tidelands or landlocked tidelands based upon the selection of Preferred Alternative for the project (South Station site and Widett Circle). Specifically, the FEIR should include a discussion of: the purpose and effect of the project, impact of the project on abutters and the surrounding community, enhancement to the property, benefits to the public trust rights in tidelands, benefits provided through previously obtained municipal permits, community activities on the South Station site, environmental protection and preservation, and public health, safety, and general welfare. At the conclusion of the MEPA process (i.e., in conjunction with a Final EIR), I will issue a Public Benefit Determination in compliance with the provisions of *An Act Relative to Licensing Requirements for Certain Tidelands* (2007 Mass. Acts ch. 168, sec.8).

Stormwater

The FEIR should include a complete stormwater report, with supporting data and graphics, for the South Station and layover facility sites. This analysis should demonstrate compliance with MassDEP's SMS, as applicable and the guidance presented in the MassDEP comment letter regarding compliance with the redevelopment standards. MassDOT should gather necessary on-site soils and hydrology data to demonstrate the feasibility of surface or subsurface stormwater management BMPs. If feasible, the FEIR should incorporate these BMPs into the stormwater management system design. The FEIR should clarify which proposed BMPs will specifically be implemented within the project to meet the TMDL and Land Uses of Higher Potential Pollutant Load (LUHPPL) requirements. The stormwater management report should include conceptual BMP designs. If climate change adaptation and resiliency measures include designing the stormwater management system to accommodate more frequent and intense storm events, the FEIR should explain how this measure was accounted for in the stormwater management report.

The project includes the use of existing drainage infrastructure. The FEIR should include improved graphics at a legible scale identifying the location of project area stormwater infrastructure (i.e., pipes, easements and outfall locations) and CSO connection locations. The FEIR should describe the condition of the stormwater and CSO pipes and outfalls to Fort Point Channel to ensure the feasibility of their use in conjunction with the project. MassDOT should work with the BWSC to assess the feasibility and potential stormwater management benefit of constructing a dedicated drainage system for the South Station and Readville Yard 2 sites. MassDOT should present the results of this analysis in the FEIR.

The DEIR noted that pervious areas on the eastern and western sections of the Widett Circle site may be suitable for surface stormwater BMPs. The FEIR should report on the

outcome of soil investigations undertaken to determine the infiltration capabilities and overall suitability of the existing soils for the implementation of surface stormwater BMPs. The FEIR should also evaluate the current condition of the 54-inch drainage pipe at Readville Yard 2 and discuss whether it will be relocated in conjunction with the layover facility expansion. Related proposed conditions plans should reflect this infrastructure change, if applicable. The FEIR should include an additional evaluation of the feasibility of surface or subsurface detention, retention, and/or filtration systems at the Readville Yard 2 layover site.

The FEIR should include an assessment of the existing drainage system outfalls to Fort Point Channel to confirm their feasibility for reuse as part of the project, conceivably under a different set of conditions than their original design (e.g., elevated tail water or storms with greater precipitation frequencies).

Climate Change Adaptation

The DEIR identified clear risks to South Station and the Widett Circle layover facility in both increasing sea level rise and hurricane scenarios. While sea level rise will occur incrementally, the risk associated with hurricanes is more acute. The FEIR should discuss how climate change and storm adaptation and resiliency measures will be selected and implemented, either as part of the original project design, or within the design life of the project, with a clear commitment to implementation by MassDOT. MassDOT should consider how adaptable the proposed infrastructure will be in the future, and consider upfront adaptation measures that will be very difficult to implement once the infrastructure is in place. These measures should include, but not limited to, designing the stormwater management system for more intense rain events, installation of tidegates on outfalls, using innovative methods of track manufacturing and installation designed to minimize the buckling effect during extreme heat events, and designing the station and tracks to avoid or withstand flooding impacts associated with hurricanes and the 100-year flood event. If the proponent is considering raising the base level of the site, MassDOT should study the potential flooding impacts to adjacent sites and identify these potential impacts in the FEIR.

As noted in the DEIR, MassDOT, in partnership with FHWA, is conducting a vulnerability assessment project that will identify infrastructure target areas and assets that may be particularly vulnerable to current and future flooding events. The project is composed of seven phases, including: inventory and survey of assets, hydrodynamic analysis, a vulnerability assessment, an adaptation strategy, and is anticipated to result in a final report and presentation by the end of 2014. The FEIR should include a sensitivity analysis comparing the results of this vulnerability assessment and its associated model, the Boston Harbor Flood Risk Model, with that presented in the DEIR to determine if the extent of potential flooding during the evaluated scenarios encompasses a larger than anticipated area. The results of this analysis should be used to guide the selection of appropriate and feasible climate change adaptation and resiliency measures presented in the FEIR.

Finally, the FEIR should provide additional data on the potential depths of inundation within the SSX project area in the 100-year, 100-year plus two feet of sea level rise, and hurricane modeled events. CZM has requested that MassDOT consider a range of flooding

events over the lifetime of the project and provide information about frequency and the expected severity of inundation on the site. Knowing the severity of the anticipated flooding over the design life of the structures during various flooding events will help to inform and identify adaptation strategies.

Water and Wastewater

As requested by MassDEP, the FEIR should include a table further clarifying existing and proposed project-related wastewater flows, including those that may currently be attributable to the USPS facility and those identified as part of the SSAR project.

The FEIR should demonstrate that any proposed changes to the physical configuration, location, and/or hydraulic performance of sewers and outfalls will not affect compliance with Federal Court mandates and regulatory requirements. The DEIR identified potential impacts from sea level rise and coastal storms to CSOs and MWRA facilities indicating that three CSO outlets to Fort Point Channel near the South Station site may require additional mitigation measures to minimize seawater entering back into the CSO lines. The FEIR should describe in further detail the nature, potential scope, and location of these impacts and identify potential migration measures and the anticipated responsible party.

The FEIR should clarify potential water use and wastewater generation at the proposed layover facilities based upon operational programming (e.g., car washing). The FEIR should identify any additional permitting requirements if industrial wastewater discharges are proposed as part of the project and discuss BMPs that could be implemented to reduce water use and wastewater discharges (e.g., use of recycled wash water).

Air Quality

The FEIR should clarify if the air quality analysis conducted in the DEIR considered the potential concentration of air pollutants within the platform and track area at South Station subsequent to the construction of Build Alternatives 2 or 3. If this analysis did not evaluate this condition, the FEIR should include supplemental analyses of criteria pollutants, UFPs and DPM in the Build Condition.

The FEIR should discuss how the preferred station design and South Station platform and track layout will not alter the anticipated noise and vibration characteristics of the site modeled in the DEIR. If the Preferred Alternative will alter these modeling results, the FEIR should include an updated noise and vibration analysis conducted in accordance with FRA and MassDEP requirements to ensure that appropriate mitigation measures are provided.

Conceptual plans in the FEIR should indicate the location, type and elevation of proposed noise barriers within the SSX project areas. The DEIR also noted that noise levels inside South Station may increase by 3 to 5 dBA in the 2035 Alternatives 2 and 3, depending on the reverberation characteristics of the enclosed space. The FEIR should identify how station design elements will provide noise mitigation in interior spaces.

The FEIR should discuss whether MassDOT will implement noise and operational best management practices (BMPs) equal to or more stringent than those currently utilized at other layover facilities along the commuter rail. MassDOT should confirm that a forum for citizen complaint will be implemented as a BMP in the operational plan for any proposed layover facilities and at South Station. The FEIR should identify these proposed BMPs and note any contractual obligations associated with the operator of the MBTA's commuter rail. Specific consideration should be given to the hours of operation at each layover facility, potential idling times of locomotives and proximity to sensitive receptors. The FEIR should include a feasibility assessment of potential mitigation measures, a phasing plan for their implementation, and identification of responsible parties for their construction and maintenance.

Greenhouse Gas Emissions

The FEIR should clarify certain elements of the stationary source and mobile source GHG analyses presented in the DEIR. The FEIR should provide additional analysis, documentation or descriptive narrative as necessary to address the concerns identified below.

The FEIR should include a clear and complete listing of modeling inputs (e.g., R-values, U-values, efficiencies, lighting power density, etc.) for items such as equipment, walls, ceilings, windows, lighting, HVAC units, etc. that were modeled in the Baseline Case and Build with Mitigation Case to allow for an easier comparison with Building Code requirements.

The FEIR should clarify the calculated total energy use estimates for the Joint/Private Development projects. Energy use estimates presented in the DEIR did not identify any energy use reductions between the Baseline and Mitigation Cases for domestic hot water or exterior lighting, and reductions for miscellaneous equipment loads were only applied to residential uses. The FEIR should provide a discussion of these results. The DEIR noted that the preliminary project design did not include modifications to, or ventilation connection with, the existing South Station facilities. The FEIR should confirm if the preferred station design maintains this separation. If not, the GHG analysis may need to be revised to reflect this interconnection. MassDOT should contact the MEPA office prior to undertaking additional analysis if interconnections are proposed.

The FEIR should include additional analysis of technical and economic feasibility of the following potential renewable energy sources:

- Veolia steam network connections, including the use of steam to power absorption chillers;
- Solar PV or solar hot water (SHW) installations; and
- On-site CHP, including CHP-serving absorption chillers.

These analyses should clearly state design assumptions, calculate projected energy savings based upon overall project demand (e.g., domestic water demand, etc.), potential GHG emissions reductions, and describe implementation or permitting challenges.

The FEIR should include at a minimum a commitment to construct buildings to be "solar ready" to facilitate future installation of PV systems. If PV is not financially feasible, I request that MassDOT commit to revisit the PV financial analysis on a regular timetable and to implement PV when the financial outcomes meet specified objectives.

The FEIR should include an updated draft tenant manual to reflect the elements of the Preferred Alternative, the recommendations from MassDEP (if feasible), and any potential modifications to the proposed ownership and/or tenant leasing structure.

The mobile source emissions analysis should be revised to account for indirect electrical use associated with the proposed plug-in facilities at South Station and the layover sites. MassDOT may also choose to evaluate mobile source emissions improvements attributable to reduced idling and congestion associated with the proposed traffic intersection improvements.

The DEIR notes various sustainability benchmarking standards and/or requirements as they apply to MassDOT facilities. The FEIR should clarify which standards MassDOT must adhere to in the final design process and those which are merely informational. The FEIR should clarify how the project intends to meet these standards given, in some cases, the outdated benchmarks (e.g., ASHRAE 90.1-2004 for LEED Plus) compared to current Massachusetts Stretch Code standards. The FEIR should also clarify which sustainable infrastructure rating system MassDOT intends to adopt to ensure the project design meets targeted sustainability goals.

Historic Resources

The FEIR should describe how the preferred station design will mitigate potential impacts to historic resources. In a letter to Michelle Fishburne at the FRA, dated December 23, 2014, the MHC requested that conceptual designs for new construction and/or modification to the South Station headhouse be submitted to MHC for review and comment. This letter also requested that MassDOT include a matrix of potential effects for National Register-Listed or National Register-eligible historic architectural resources with the Preferred Alternative's APE. The FEIR should provide an update on the Section 106 review process and identify proposed mitigation measures for impacts to historic architectural resources. Interim correspondence and project renderings between the FRA, MHC and/or City historic review authorities should be provided as an appendix for reference.

Hazardous Materials

MassDOT will conduct Phase 1 Environmental Site Assessments (ESAs) on the project properties. If any Recognized Environmental Conditions (RECs) are identified, the FEIR should include a draft site-specific health and safety plan (SSHASP). Upon selection of a Preferred Alternative, MassDOT should conduct any Phase II ESA's identified subsequent to the Phase 1 ESA process and present the results as part of the FEIR. If a Phase II is required, the FEIR should identify the components of a draft soil and groundwater sampling and analysis program to ensure compliance with the MCP and inform the selection of mitigation measures proposed in conjunction with the project or the construction process. The FEIR should specifically discuss

how MCP-regulated conditions may impact construction techniques (i.e., dewatering, foundation types, etc.) or potential site infrastructure (e.g., groundwater and stormwater management) in the Preferred Alternative.

The FEIR should discuss the potential implications of the AUL on the Readville Yard 2 site. The FEIR should identify the responsible party, plans for remediation, and how compliance with the MCP may impact layover facility design or the construction timeline.

Construction Period

The FEIR should include an evaluation and description of potential construction period access locations and laydown areas for station, rail and layover facilities. I encourage MassDOT to continue to develop staging and construction period access plans in collaboration with the City of Boston, Amtrak, the MBTA and other landowners as required. The FEIR should also describe how Amtrak, MBTA commuter rail and light rail, bus, and freight service will be modified and accommodated during project construction (on a per phase basis) for both the South Station Site and construction of selected layover facilities, as applicable.

I strongly encourage MassDOT to commit to monitoring noise and vibration levels after service starts (with the proposed mitigation in place) to evaluate whether actual noise and vibration levels correspond with the modeled values. MassDOT should indicate how appropriate corrective actions may be determined and implemented if actual values are found to be higher than the projections.

The FEIR should include a revised draft CMP, as necessary, to reflect the elements of the Preferred Alternative. The CMP should specifically discuss provisions for construction worker parking, noting the challenges of a large urban construction site. The revised draft CMP should also identify potential triggers for remedial action based upon construction period monitoring results.

Mitigation

The FEIR should include a separate chapter summarizing proposed mitigation measures. This chapter should also include draft Section 61 Findings for each State Agency that will issue permits for the project. The FEIR should contain clear commitments to implement mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation, updating these elements as necessary from those presented in the DEIR. While local roadway improvements may be memorialized in future TAPAs with the City of Boston, the relationship of the project to state-jurisdictional roadways necessitates that the FEIR clearly indicate the implementation of mitigation measures based upon project phasing, either tying mitigation commitments to specific building projects, floor area thresholds, or traffic/wastewater demand or thresholds, to ensure that measures are in place to mitigate the anticipated impact associated with each development phase.

The project includes a variety of public-realm infrastructure improvements. The FEIR should include a conceptual long-range maintenance plan these public-realm improvements, including identification of responsible parties, to ensure adequate upkeep of these project-related improvements. If a long-term maintenance plan structure is unknown, the FEIR should include a commitment by the MassDOT to work with the City and neighborhood associations to establish a plan.

To ensure that all GHG emissions reduction measures adopted by MassDOT in the Preferred Alternative are actually constructed or performed, I require proponents to provide a self-certification to the MEPA Office indicating that all of the required mitigation measures, or their equivalent, have been completed. Specifically, I will require, as a condition of a Certificate approving an FEIR that following completion of each project construction phase MassDOT provide a certification to the MEPA Office signed by an appropriate professional (e.g., engineer, architect, transportation planner, general contractor) indicating that the all of the mitigation measures proposed in the FEIR have been incorporated into the project. Alternatively, MassDOT may certify that equivalent emissions reduction measures that collectively are designed to reduce GHG emissions by the same percentage as the measures outlined in the FEIR, based on the same modeling assumptions, have been adopted. The certification should be supported by plans that clearly illustrate where GHG mitigation measures have been incorporated. For those measures that are operational in nature (i.e. TDM) MassDOT should provide an updated plan identifying the measures, the schedule for implementation and how progress towards achieving the measures will be obtained. The commitment to provide this self-certification in the manner outlined above should be incorporated into the draft Section 61 Findings included in the FEIR.

Responses to Comments

The FEIR should contain a copy of this Certificate and a copy of each comment letter received. In order to ensure that the issues raised by commenters are addressed, the FEIR should include direct responses to comments to the extent that they are within MEPA jurisdiction. This directive is not intended to, and shall not be construed to, enlarge the scope of the FEIR beyond what has been expressly identified in this certificate.

Circulation

The Proponent should circulate the FEIR to those parties who commented on the ENF, and/or the DEIR, to any State Agencies from which the Proponent will seek permits or approvals, and to any parties specified in section 11.16 of the MEPA regulations. A copy of the FEIR should be made available for review at the nearest neighborhood branches of the Boston Public Library. To save paper and other resources, the Proponent may circulate copies of the FEIR to commenters other than State Agencies in CD-ROM format or post to an online website, although the Proponent should make available a reasonable number of hard copies, to accommodate those without convenient access to a computer to be distributed upon request on a first come, first served basis. The Proponent should send a letter accompanying the CD-ROM or identifying the web address of the online version of the FEIR indicating that hard copies are available upon request, noting relevant comment deadlines, and appropriate addresses for submission of comments.

December 31, 2014
Date

Maeve Vallely Bartlett

Comments received:

11/18/2014	Ned Imbrie
11/24/2014	Katherine Green Meyer
12/1/2014	Coleman Hoyt
12/2/2014	Robert J. La Tremouille
12/7/2014	Congressman Michael E. Capuano (Massachusetts 7th District)
12/12/2014	Steve Hollinger
12/15/2014	City of Boston
12/17/2014	Greater Boston Chamber of Commerce
12/18/2014	Harvard University
12/19/2014	James RePass
12/20/2014	Michael S. Dukakis
12/22/2014	Frank DeMasi
12/22/2014	James G. Grant Co., LLC
12/22/2014	Massachusetts Chapter of the Sierra Club
12/22/2014	New Boston Food Market Development Corporation
12/23/2014	State Representative Frank I. Smizik (15th Norfolk District)
12/23/2014	Massachusetts Port Authority (Massport)
12/23/2014	Robert L. Beal
12/23/2014	Medical Academic and Scientific Community Organization (MASCO)
12/23/2014	State Senator Bruce Tarr (1st Essex and Middlesex District)
12/23/2014	Don't Dump on Us Task Force
12/23/2014	Massachusetts Office of Coastal Zone Management
12/23/2014	Massachusetts Water Resources Authority
12/23/2014	Association for Public Transportation
12/24/2014	Kenneth J. Krause
12/24/2014	Frederick Salvucci
12/24/2014	Joseph Rogers
12/24/2014	Stephen H. Kaiser
12/24/2014	Gerry Pieri
12/24/2014	Brad Bellows
12/24/2014	Adam Castiglioni
12/24/2014	Drew Volpe
12/24/2014	Paola M. Ferrer, Galen M. Nook, Rich Parr, Jessica Roberston (residents of Allston), Anthony D'Isidoro (Allston Civic Association), Matthew Danish (Livable Streets Alliance), Harry Mattison (Charles River Conservancy), and Robert Sloane (WalkBoston)
12/24/2014	State Representative Sean Garballey (Arlington)

12/24/2014	Massachusetts Department of Environmental Protection – Northeast Regional Office (MassDEP – NERO)
12/24/2014	Fidelity Real Estate Company
12/24/2014	Boston University
12/24/2014	Metropolitan Area Planning Council
12/24/2014	The Boston Harbor Association
12/24/2014	Boston Water and Sewer Commission
12/26/2014	Paola M. Ferrer, Galen M. Nook, Jessica Roberston, Matthew Danish (residents of Allston), Anthony D'Isidoro (Allston Civic Association), Steve Miller (Livable Streets Alliance), Harry Mattison (Charles River Conservancy), and Robert Sloane (WalkBoston) (LATE COMMENT)

MVB/HSJ/hsj

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Charles D. Baker
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August 12, 2016

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
FINAL ENVIRONMENTAL IMPACT REPORT

PROJECT NAME	: South Station Expansion Project
PROJECT MUNICIPALITY	: Boston
PROJECT WATERSHED	: Boston Harbor
EEA NUMBER	: 15028
PROJECT PROPONENT	: Massachusetts Department of Transportation
DATE NOTICED IN MONITOR	: July 6, 2016

As Secretary of Energy and Environmental Affairs, I hereby determine that the Final Environmental Impact Report (FEIR) submitted on this project **adequately and properly** complies with the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62I) and with its implementing regulations (301 CMR 11.00).

Project Description

The project, which is referred to as the South Station Expansion (SSX), consists of an expansion of Boston's South Station by the Massachusetts Department of Transportation (MassDOT). Currently, all 13 existing tracks and eight platforms at South Station are fully used by National Railroad Passenger Corporation (Amtrak) and the Massachusetts Bay Transportation Authority (MBTA). Both operators are constrained in their ability to increase service or offer new services due to the size and configuration of the station and terminal facilities. Daytime vehicle layover capacity for the MBTA's south side commuter rail service area is inadequate and unable to meet projected demand.

The SSX will support expansion of intercity and high-speed rail (HSR) service into South Station as stated in Amtrak's *NEC Master Plan,* its *Vision for High Speed Rail in the Northeast Corridor (2012 Update)* and improve existing rail operations and service delivery at South Station provided by Amtrak and the MBTA. MassDOT, the MBTA, the Federal Railroad Administration (FRA) and Amtrak have identified the expansion of rail capacity at South Station as a critical regional and national transportation need. Current weekday ridership at South Station includes an average of approximately 4,100 Amtrak combined boardings and alightings, and 42,000 combined MBTA commuter rail boardings and alightings. Combined South Station boarding and alightings in 2012 include 54,000 on the Red Line, 12,700 on the Silver Line, 2,900 on local bus routes, and 12,200 on intercity/commuter bus routes. By the year 2035, Amtrak projects that daily intercity rail ridership at South Station will increase to approximately 5,500 combined boardings and alightings. South Station commuter rail boarding and alightings are projected to increase to 56,000 daily riders by 2035. Amtrak's 2030 plans call for increased service between Boston and New York City and additional trains to operate over an "inland route" connecting Boston, Worcester, Springfield and New Haven. The project is expected to improve the rail system's ability to absorb demand along the MBTA's south side commuter rail lines and along the NEC. In the 2025 opening year, the project would support an increase in ridership of approximately 16,000 to 17,000 additional daily combined commuter rail and Amtrak intercity rail boardings and alightings at South Station over the No Build Alternative. By 2035, these numbers would increase to approximately 20,000 to 22,000.

The project includes:

- Expansion of the South Station terminal facilities by approximately 385,000 square feet (sf) by adding seven tracks and four new platforms, reconfiguring existing platforms, and constructing larger passenger circulation and waiting areas, amenities, and back of house space. The Tower 1, Broad and Cove Interlockings will be reconfigured to reduce conflicting movements through the terminal area;[1]
- Acquisition and demolition of the U.S. Postal Service (USPS) General Mail Facility located on Dorchester Avenue to provide a 16-acre site upon which to expand South Station and restore Dorchester Avenue for public and station access. The USPS facility acquisition is identified as a state-funded project in the MBTA's *FY2015-FY2019 Capital Investment Program (CIP)*;
- Reopen Dorchester Avenue and construct pedestrian, bicycle, local transit, and vehicular improvements to support two-way access;
- Extend Harborwalk by approximately 2,500-feet along Dorchester Avenue;
- Construction of additional rail layover space to address existing and future Amtrak and MBTA service expansions and other planned improvements. Layover facilities are used to store, service, inspect, and maintain trains when they are not in service.

The project is proposed to support improved rail and passenger service; improve pedestrian and bicycle circulation and amenities, vehicular circulation and multimodal connections; and support regional and local economic development. The project will improve operational efficiencies in and out of South Station, upgrade facilities to meet Americans with

[1] An interlocking is a segment of railroad infrastructure comprised of track, turnouts, and signals linked (interlocked) in a way that allows for trains to move safely from on track to another, or across tracks, by preventing conflicting train movements.

Disabilities Act (ADA) and life safety regulations, and extend platform lengths to meet Amtrak and MBTA future berthing requirements. The project is expected to provide the ability to meet Amtrak's and the MBTA's established objectives of 95 percent on-time performance (OTP) for Acela and commuter rail service, and 90 percent for Amtrak Northeast Regional trains.

To date, MassDOT has received $32.5 million from the FRA and $10 million in additional State funding to complete preliminary engineering and environmental assessment and permitting for the project. The FRA grant was accepted on September 12, 2011 and ends on June 30, 2017. Per the terms of the grant agreement, the FRA may suspend or terminate the agreement if MassDOT fails to make reasonable progress or acts in a manner that endangers substantial performance on the project. If the grant is terminated, MassDOT will be required to pay all or a portion of the grant back to the FRA, depending upon the severity of the action.[2] MassDOT's submittal of this FEIR for the selected Preferred Alternative is intended to demonstrate reasonable progress towards advancement of the project consistent with the FRA grant. At this time, no additional sources of federal or State funding have been allocated for final engineering or construction of SSX.

I have received comments from U.S. Representative Michael Capuano, State Representative Frank I. Smizik, State Representative Sean Garballey, State Representative Carmine L. Gentile, and State Representative Chris Walsh, numerous State Agencies, public interest groups, business leaders, rail advocates, and individuals. Comments express varying opinions and support for the project as proposed - or an alternative project comprised of the North South Rail Link (NSRL) - as well as concerns about the potential environmental impacts associated with rail service at South Station and layover facilities within the City of Boston. Funding has been allocated for study of the NSRL but it is not incorporated into the project at this time. Many commenters have requested I require that the project be redesigned and include the NSRL. MEPA is an environmental disclosure process. It does not evaluate the purpose or need of a project nor mandate what project a Proponent advances for review. Ongoing opportunity for public comment on the SSX project will be provided as part of the FRA review process, MassDEP c.91 licensing, and public outreach efforts conducted by MassDOT.

Project Area

The approximately 49-acre South Station project site is bounded by Summer Street to the north, Dorchester Avenue and the Fort Point Channel to the east, Atlantic Avenue to the west, and the MBTA's Cabot Yard to the south. The South Station project site also extends along a portion of the NEC Main Line to the west past the Cove Interlocking and along the MBTA's Fairmount/Old Colony Railroad Line to the south just past the Broadway Interlocking. South Station is located at the junction of several Boston neighborhoods including Chinatown, the Leather District, the Fort Point Channel, and the Seaport-Innovation District/South Boston Waterfront.

South Station is the sixth busiest station in the national Amtrak system and is the terminus of Amtrak's Northeast Corridor (NEC) service and Lake Shore Limited service from Chicago via Albany. South Station serves as the terminus for the western and southern lines of

[2] Email from Paul Godfrey, HNTB Corporation, dated August 9, 2016.

the MBTA's commuter rail system. There are nine main line approach tracks that currently converge in the South Station terminal area. Of these nine tracks, five arrive at South Station from the west, consisting of the NEC Main Line, which operate on tracks 1, 2, and 3, and the MBTA's Framingham/Worcester Line, which operates on tracks 5 and 7. The remaining four tracks arrive at South Station from the south, consisting of the MBTA's Fairmount Line, which operates on the Fairmount Line/Dorchester Branch tracks and the MBTA's Old Colony Line, which operates on the Old Colony tracks. South Station also provides connections to the MBTA's Red Line, Silver Line and local bus routes and intra-city bus routes run by private bus companies.

The project includes the construction of layover facilities within the City of Boston. An alternative analysis that evaluated 28 potential locations to alleviate existing layover deficiencies and support future service expansion was completed as part of the DEIR. Three sites for new and/or expanded layover facilities were selected for design advancement in the FEIR. These potential layover locations include:

- Widett Circle - a 29.4-acre site located approximately one mile south of South Station at 100 Widett Circle and 1 and 2 Foodmart Road, primarily in private ownership;
- Beacon Park Yard - a freight yard and intermodal terminal most recently used by CSX Transportation, Inc. (CSXT) located along Cambridge Street in the Allston section of Boston and approximately four track-miles from South Station on the MBTA Framingham/Worcester Line. A facility at this location will allow the MBTA to meet its current need for additional layover capacity for commuter rail operations on the tracks west of South Station; and
- Readville Yard 2, an existing MBTA layover yard and maintenance facility located off Wolcott Court in the Hyde Park section of Boston, approximately nine track-miles from South Station.

The Beacon Park Yard layover facility will continue to be reviewed in conjunction with the Interstate 90 (I-90) Allston Interchange Project (EEA No. 15278) as noted in both the Certificate on the Environmental Notification Form (ENF) for the Allston Interchange Project and the Certificate on the DEIR for the SSX project. MassDOT and the MBTA are preparing the DEIR for the Allston Interchange project with an anticipated submittal date of Spring 2017. I note comments received regarding the potential layout of the BPY facility within the Allston Interchange project area. MassDOT should review these comments to inform their preparation of the Allston Interchange DEIR. According to the FEIR, the Beacon Park Yard layover facility is expected to be constructed and in service in advance of the construction of SSX, pending completion of its MEPA review process as part of the Allston Interchange project. If the I-90 Allston Interchange project does not advance in a timely manner and MassDOT wishes to commence use of BPY in a manner beyond that specifically authorized in its agreement with Harvard University, a Notice of Project Change (NPC) may be required for the SSX project.

Site History

Portions of the project site have previously been subject to MEPA review as far back as 1973. Of these prior filings, only three projects required the preparation of an EIR. The South

Station Air Rights Project (SSAR) (EEA Nos. 3205 and 9131) consists of an approximately 2.5 million square foot[3] mixed-use development located on the northern end of the site above existing portions of the South Station headhouse and tracks. The project also includes a horizontally expanded bus terminal, enhanced pedestrian connections and expansion of the bus terminal parking garage. A NPC for the SSAR was submitted for MEPA review and noticed in the August 10, 2016 *Environmental Monitor*. The NPC identifies minor changes in design, massing and square footage, alternatives for Phase 2 as hotel, residential or a combination thereof, and an increase of 140 parking spaces. MassDOT has assumed that the SSAR project will be constructed prior to the SSX project, but the SSX design is not dependent upon SSAR construction, nor does it preclude the ability to construct SSAR if SSX proceeds first. The SSX project assumed the same platform lengths, headhouse and concourse circulation and access points described in the SSAR during advancement of its design plan. MassDOT has, and should continue to, coordinate with the SSAR proponents to ensure that ongoing design refinements for either project do not result in constructability conflicts and maximize potential efficiencies for either project's construction process and minimization and mitigation of construction period impacts.

The NSRL Project (EEA No. 10270) consists of a three-mile tunnel linking North and South Stations and associated rail infrastructure. The DEIR for this project was determined to adequately and properly comply with the MEPA Regulations in July 2003. A Final EIR was not filed for the project. Given the lapse of time since the filing of the DEIR, this project, if it was to advance, would require reinitiating the MEPA review process.

MassDOT's draft *2017-2021 Capital Investment Plan* (CIP) has $2.0 million programmed for a NSRL corridor and area planning study. I acknowledge that a key benefit of the NSRL project that will not be realized by the SSX project currently under review is a seamless connection between South Station and North Station. This connection would provide enhanced service along the MBTA commuter rail, subway, and NEC lines and would facilitate operations and maintenance by eliminating the need to run non-revenue trains to reach more distant layover facility locations. The FEIR indicated that the Preferred Alternative will expand South Station such that the project goals can be met without eliminating the potential for future underground infrastructure that will likely be necessary to implement the NSRL such as tunnel portals and station platforms.

Jurisdiction and Permitting

This project is subject to MEPA review and requires the preparation of a mandatory EIR because it requires State Agency Actions and will result in the expansion of an existing non-water-dependent structure, provided the use or structure occupies one or more acres of tidelands (301 CMR 11.03(3)(a)(5)).[4]

The project requires a c.91 Waterways License and may require a Section 401 Water Quality Certification (401 WQC) from the Massachusetts Department of Environmental

[3] Updated square footage based on Notice of Project Change filed on July 29, 2016.

[4] Due to the selection of a transportation only preferred alternative, previously cited MEPA thresholds for wastewater generation, daily vehicle trips and parking spaces no longer apply.

Protection (MassDEP) and air-rights easements or approvals from the MBTA.[5] The project may require a MassDEP Dewatering General Permit for dewatering of non-contaminated groundwater and a MassDEP Remediation General Permit for dewatering of contaminated groundwater. The project may require an 8(m) Permit, Construction Site Dewatering Discharge Permit and/or a Sewer Use Discharge Permit from the Massachusetts Water Resources Authority (MWRA).

The project is subject to State Register Review (950 CMR 71.00) and Section 106 Review (36 CFR 800) by the Massachusetts Historical Commission (MHC). A Federal Consistency Certification from the Massachusetts Office of Coastal Zone Management (CZM) will also be required.

An Order of Conditions will be required from the Boston Conservation Commission, or in the case of an appeal, a Superseding Order of Conditions from MassDEP. The project will also require a Drainage Discharge Permit and may require a Dewatering Discharge Permit from the Boston Water and Sewer Commission (BWSC).

The project requires several federal permits and approvals including, but not limited to: approval under the National Environmental Policy Act (NEPA), Part 77 Airspace Review from the Federal Aviation Administration (FAA), Section 4(f) Review by the FRA and a National Pollutant Discharge Elimination System (NPDES) Construction General Permit from the United States Environmental Protection Agency (EPA). The project may require a NPDES Permit, a Notice of Intent, or a NPDES Permit Exclusion associated with construction period dewatering. The project is subject to the MEPA Greenhouse Gas (GHG) Emissions Policy and Protocol.

The project will receive Financial Assistance in the form of funding from the Commonwealth and the FRA. Therefore, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

Project Changes Since the DEIR

Since the completion of the DEIR, MassDOT selected a Preferred Alternative to advance through the FEIR process. Previous MEPA review documents considered the environmental impacts of four alternatives: a No-Build Alternative, a Transportation Improvements Only Alternative (Alternative 1), a Joint/Private Development Minimum Build Alternative (Alternative 2), and a Joint/Private Development Maximum Build Alternative (Alternative 3). MassDOT has chosen to advance Alternative 1 – Transportation Improvements Only for further design, review and permitting. Therefore, potential environmental impacts associated with either joint/private development alternative do not warrant further assessment at this time. MassDOT acknowledged the potential for future development on-site and has taken measures in the design of the headhouse and terminal that it will not preclude, to the extent practicable, future transit-oriented development. If development is pursued in the future, additional MEPA review will likely be required to assess the specific environmental impacts associated with the development. The Proponent should consult with the MEPA office prior to advancing any additional

[5] Due to the selection of the transportation only preferred alternative, the project will no longer require a Vehicular Access Permit from MassDOT or an amendment to the Fort Point Channel Downtown Waterfront Municipal Harbor Plan.

development plans on-site to determine the applicability of the MEPA regulations and need for additional MEPA review.

The Preferred Alternative station design has been advanced since the submission of the DEIR resulting in a reduction in overall square footage from 400,000 sf to 385,000 sf and a refinement in the location of the headhouse, pedestrian access points, and elevated concourses. In addition, the Preferred Alternative includes raising a portion of the Fort Point Channel seawall to match the elevation of the existing seawall to the north and south. Raising the seawall in this location is in direct response to vulnerabilities associated with projected sea level rise during the lifespan of the project.

Environmental Impacts and Mitigation

Impervious area will decrease on the South Station site and remain the same on the Widett Circle and Readville Yard 2 sites. The project will impact approximately 700 linear feet (lf) of Coastal Bank, 2.9 acres of Land Subject to Coastal Storm Flowage (LSCSF), and 7.9 acres of 100-foot buffer zone to Bank at the South Station site and 0.01 acres of Riverfront Area and 0.28 acres of 100-foot buffer zone to Bank at the Readville Yard 2 site. The project will impact filled Commonwealth Tidelands. At the South Station site, water usage will increase by approximately 165,561 gallons per day (gpd) for a total of 538,461 gpd and wastewater generation will increase by approximately 150,560 gpd, for a site total of 489,510 gpd. Water usage at the Widett Circle site will decrease by approximately 8,020 gpd to 6,440 gpd and wastewater generation will decrease by approximately 7,290 gpd to 5,850 gpd. Water usage at the Readville Yard 2 layover facility will increase by approximately 1,720 gpd to 3,870 gpd and wastewater generation will increase by approximately 1,560 gpd to 3,510 gpd.

The project will meet applicable State and federal wetland resource area performance standards and comply with the Wetlands Regulations (310 CMR 10.00) stormwater management standards (SMS), as applicable for redevelopment projects. Improvements to eight intersections, in addition to added bicycle and pedestrian amenities and accommodations, will improve multi-modal access to South Station. The project includes the construction of noise barriers and use of plug-in shore power to reduce noise and vibration impacts from train operations and idling. Water and wastewater infrastructure will be constructed in compliance with applicable MassDEP, BWSC and MWRA regulations. The project includes several measures to mitigate and adapt to climate change impacts including raising the wall along Dorchester Avenue along the Fort Point Channel and using more intense precipitation data to model and design the proposed stormwater management system. MassDOT will prepare a Construction Management Plan (CMP) and will schedule construction in a manner that limits impacts to passenger service during peak periods.

Review of the FEIR

General

The FEIR provided a clear summary of the Preferred Alternative and included the results of additional data collection and analysis to identify potential project-related environmental impacts. The FEIR provided a response to comments, as directed by the Certificate on the DEIR, and was prepared consisted with Section 11.07 of the MEPA regulations. MassDOT held a public hearing on July 20, 2016 to review the FEIR and provide opportunities for questions and comments from the public.

The FEIR described actions taken in accordance with the project's public involvement plan (PIP), which complies with MassDOT policies regarding environmental justice (EJ), Title VI, and accessibility. MassDOT briefed the City of Boston's Office of Neighborhood Services, the Boston Redevelopment Authority, and the Mayor's Office on the FEIR's content and recommendations; held a series of briefings and/or corresponded with local agencies and stakeholders in 2016 with project updates; developed a layover facility outreach activities plan in coordination with the FEIR which included community meetings in the Widett and Readville neighborhoods; and publicized and disseminated information about public meetings, publications, and so forth, using email, blogs, social marketing platforms.

Project Description and Permitting

The FEIR included a detailed description of the project and included updated site plans for existing and post-development conditions for the South Station Site, Widett Circle and Readville Yard 2. The FEIR also included plans depicting each interlocking (Interlocking 1, Cove and Broad) and clearly identified existing conditions at each interlocking, environmental or property ownership constraints and proposed modifications to trackwork. The FEIR described the benefits and constraints of various interlocking design alternatives, including how this design will eliminate or reduce delays due to interlocking malfunction or a disabled locomotive.

The FEIR indicated that updated ridership projections for South Station have not been performed since the DEIR. Ridership projections in 2035 for MBTA South Side commuter rail service and Amtrak service for intercity rail were used for project planning purposes. The Preferred Alternative of 20 total tracks at South Station was determined based upon the maximum throughput at a reconfigured Tower 1 Interlocking and optimal track configuration to maximize capacity.

Alternatives Analysis

As noted previously, MassDOT selected a Preferred Alternative consisting of a transportation improvements only program at South Station and layover facilities at Widett Circle and Readville Yard 2. The FEIR described conceptual design's consistency with MassDOT's station design principles, project purpose and need, and established performance objectives. The FEIR included the results of the *Track Configuration Alternatives Analysis – Tier 2 Screening Technical Report* which further evaluated two terminal track configurations

based on the following criteria: platform accessibility and ability to meet berthing requirements; ability to accommodate future service plans and to meet OTP and delay goals; minimization of impacts to existing infrastructure and passenger service disruption; order-of-magnitude construction costs; and overall maintenance cost of special Tower 1 Interlocking trackwork. Alternative 2 focused on streamlining operations while Alternative 3 focused on minimizing disruptions to service. Each alternative will have equal environmental impacts. Based upon this screening assessment, MassDOT chose Alternative 3 for the track configuration.

The FEIR also included a *Rail Operations Analysis Technical Report* that summarized the basis of operations analysis for the SSX project along with the methodology and assumptions used as part of the simulation modeling effort (e.g., future Amtrak and MBTA, freight, and midday layover operations). According to the FEIR, Alternative 3 will result in minimal impact to the Tower 1 Interlocking track configuration and, therefore, minimal impact to existing operations. The proposed terminal track layout will allow up to seven trains to move simultaneously through the Tower 1 Interlocking. It will reduce the number of conflicting movements in the terminal area by allowing more trains to use the Broad and Cove Interlockings to make faster and more efficient crossover moves prior to berthing at station platforms. The project will include construction of an approximately 850-foot long third running track between the Broad and Tower 1 Interlockings to stage one trainset outside of Tower 1 Interlocking and maximize efficiency and speed through the Tower 1 Interlocking. Efficiencies at Broad Interlocking will also be gained through the installation of new universal crossovers on the north end of the interlocking and maintaining moves to the Wye track and Service and Inspection (S&I) Facility. At the S&I Facility a new yard lead will be constructed and the existing yard tracks will be realigned. Alternative 3 will also avoid impacts to the bus terminal and minimize impact to the future bus terminal expansion foundation and columns. Freight operations were included in the operations analysis (assuming existing freight windows) and will not be adversely impacted by the modeled future year passenger rail service plans.

The FEIR compared operational efficiencies between Alternatives 2 and 3. Both alternatives will meet the 2035 future service plans for the MBTA and Amtrak. While Alternative 2 is projected to result in less delay and greater OTP than Alternative 3 based upon simulated non-randomized and randomized delay scenarios, each alternative is expected to provide reliable service based on 2035 ridership estimates. Alternative 2 will provide greater operational efficiency and more parallel moves than Alternative 3. The FEIR acknowledged that Alternative 3, while providing increased flexibility for non-revenue moves between South Station and south side layover facilities, will pose several operational challenges compared to Alternative 2 with regard to requiring additional track moves or creating conflicting movements under certain operational conditions.

Alternative 3 will maintain the existing platform configuration at South Station and expand the terminal track configuration to the east with four new platforms and seven new tracks parallel to the existing tracks. Existing platforms will remain at 17 feet, 6 inches wide while new platforms will be 26 feet wide to meet current NFPA and ADA requirements. Platform G is the only existing platform that will be modified. This terminal track configuration includes platforms ranging in length from 708 feet to 1,085 feet. This alternative will likely require two design modifications to enhance platform capabilities and accommodate desired MBTA and Amtrak

berthing lengths (850 feet and 1,050 feet, respectively). Anticipated modifications include locating the locomotive and a portion of the first coach beyond the end of the platform and/or using a fixed-type bumping post to replace some of the longer hydraulic bumping posts currently in use. These design modifications considered the anticipated shortening of some existing platform lengths as part of the SSAR project.

The FEIR identified proposed station track accessibility based upon approach tracks and interlockings on the various service lines into South Station. Alternative 3 allows for greater overall track/platform accessibility and longer platform lengths compared to Alternative 2. Alternative 3, with design modifications, will meet platform berthing requirements for Amtrak trainsets at 14 out of 20 station tracks. Alternative 3 ranked higher in constructability and capital cost, while Alternative 2 was ranked higher in maintenance cost and operations. MassDOT consulted with Amtrak and the MBTA, both of which expressed a preference for Alternative 3 based upon all the screening criteria.

Layover Facilities

As noted in the FEIR, MBTA revenue trains entering South Station from the south will ideally layover at the south side facilities (i.e., Widett Circle and Readville Yard 2) to optimize operations. The *Railroad Operations Analysis Technical Report* assumed both revenue and non-revenue trips and their impacts to commuter rail service along each south side line. All Amtrak trains will continue to layover at Southampton Street Yard in future conditions. The FEIR indicated that additional MBTA midday layover facilities will provide Amtrak trains with nearly exclusive use of the central platforms at South Station, allow for a greater number of trains to move in and out of the terminal, and reduce conflicting movements at Tower 1 Interlocking.

The FEIR indicated that the midday layover facilities will provide a location to stage MBTA commuter rail trains and relieve train crews between revenue runs, typically during midday off-peak hours. According to the FEIR, the average layover duration is approximately four hours and 30 minutes. Layover facilities will store essential supplies for each locomotive (e.g., fuel, sand, lubricants, and coolants) and provide sanitary systems maintenance and water for coaches equipped with restrooms. Cleaning and minor running repairs (e.g., replacements of lights, fixing jammed doors, etc.) will also occur at layover locations. No heavy maintenance functions are proposed at either facility; routine service, inspection, and repairs will be conducted at the South Side S&I facility while extensive equipment repairs will be conducted at the MBTA's North Side Commuter Rail Maintenance Facility.

Layover demand will increase over time as ridership grows and operations are modified. MassDOT noted that there are opportunities to phase the construction of the proposed layover facilities to meet existing layover needs and those associated with MBTA commuter rail service expansion. The FEIR assumed that the Beacon Park Yard layover facility will be constructed prior to 2035, which may help support short-term south side midday layover capacity and maintenance needs. MassDOT indicated that the expansion of South Station will be able to advance independently of layover facility sites, on separate timelines, as necessary. Anticipated service enhancements to passenger rail service by 2035 will be supported by an expanded Readville Yard 2, followed by full build-out of Widett Circle as layover demand increases. It is

important to note that, consistent with MEPA recommendations, the FEIR has assumed a maximum impact scenario with regard to layover facility storage capacity and operations. It is a possible, given future operations and ridership that maximum layover capacity will not be realized at one or all of the proposed layover facilities.

Land

The FEIR identified the following changes to land associated with the Preferred Alternative:

- Acquisition of the USPS property (approximately 14 acres) to facilitate expansion of South Station;
- Acquisition of a parcel located adjacent to 245 Summer Street (approximately 0.2 acres);
- Reopening of Dorchester Avenue to create a public right-of-way (ROW) (approximately 5.0 acres);
- Acquisition of the Cold Storage and New Boston Food Market properties (approximately 25.1 acres) for the construction of the Widett Circle layover facility;
- Acquisition of DPW/City of Boston property (approximately 0.1 acres) for the proposed track realignment of the Fairmount Line/Dorchester Branch;
- Acquisition of Foodmart Road and Widett Circle (approximately 6.2) acres for the construction of the Widett Circle layover facility; and
- Partial acquisition of the James G. Grant Co. LLC property (approximately 0.7 acres) to facilitate the expansion of the Readville Yard 2 layover facility.

The FEIR described the existing conditions on each parcel of land proposed for acquisition or that will require an easement as part of the Preferred Alternative. The FEIR identified current ownership of individual properties, which range from private ownership, to City of Boston and Commonwealth of Massachusetts, to Amtrak parcels and ROW. The FEIR also identified existing easements (primarily for utility purposes) within the project area, although significant impacts to these areas are not anticipated. MassDOT should work with MWRA and/or BWSC during final design and operations to ensure ongoing access to utilities located within these easements for maintenance. Property easements associated with the agreements between the MBTA, BRA, USPS, and 245 Summer Street will be addressed as part of the acquisition of the USPS property. I note that an inability to acquire certain properties (i.e., USPS property and/or Widett Circle properties) may render the project infeasible as currently designed.

As indicated in the FEIR, MassDOT's preferred goal is to reach agreements with owners for the purchase of properties wherein property owners will be offered just compensation based on fair market value established by a certified appraiser. Acquisition will be limited to the minimum footprints required to support each function, including access roads, stormwater management facilities, and employee parking areas (where required). All property acquisitions and relocations will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, 42 USC 4601; CFR 49 Part 24 and/or M.G.L. 79; M.G.L. 79A through the MBTA's real estate acquisition team.

Comments from the New Boston Food Market Development Corporation, which consists of property owners in the Widett Circle area, cite several concerns to the proposed layover facility, including economic burdens associated with uncertainty about future acquisition, equitable compensation if relocation occurs, and potential loss of tax revenue for the City. Comments from the City of Boston indicate a preference to avoid locating a layover facility at Widett Circle in order prioritize existing businesses and provide for long-term planning of future infrastructure investment and potential air rights development in the area. The City of Boston indicated that if Widett Circle is advanced as a layover facility location by MassDOT, close collaboration with business owners to explore fair and equitable relocation options are imperative. MassDOT should continue dialogue with business owners and the City of Boston to address the challenges associated with construction of the Widett Circle layover facility and potential conflict with business interests and city planning goals, as project design advances.

Traffic and Transportation

As the Preferred Alternative will not include a substantial redevelopment component, potential new trip generation rates will be relatively minor compared to the Joint/Private development alternatives. However, the project will impact roadway, pedestrian and bicycle infrastructure and present opportunities, particularly through the re-opening of Dorchester Avenue, to improve circulation through and around South Station. The FEIR included graphics identifying proposed routes to and from South Station from key roadways and locations such as South Boston, I-93 north, I-93 south, and the MassPike. Maintenance of public realm improvements to Dorchester Avenue, including the Harborwalk and cycle track, will be the responsibility of the City to maintain, or, if desired, the City may develop maintenance agreements with others. As Dorchester Avenue will be a public ROW, the City will be responsible for maintenance and repairs to the hardscape, landscape, drainage systems, pavement markings, lighting, signage and traffic signals.

The project includes measures to improve operations and safety conditions for motor vehicles, pedestrians, and bicycles. MassDOT analyzed 21 intersections in the South Station study area and two intersections each in the Widett Circle and Readville Yard 2 study areas as part of the DEIR. Eight intersections, all in the South Station study area, were identified that will benefit from changes to improve traffic flow and bicycle and pedestrian mobility.[6] These mitigation measures are discussed later in this Certificate, and will, in most cases improve level-of-service (LOS) at these intersections during the morning or evening peak hour in the 2035 condition. As noted in the FEIR, some intersections cannot be effectively mitigated in a manner that improves LOS beyond LOS E or F without impacting accommodations for pedestrians and bicyclists.

MassDOT will prepare a Construction Management Plan (CMP) for review and approval by the Boston Transportation Department (BTD) to minimize disruption during the construction period. This CMP should specifically address maintaining safe pedestrian and bicycle

[6] These intersections include: Atlantic Avenue at Summer Street; Purchase Street at Summer Street; Surface Road at Essex Street/Lincoln Street; Summer Street at Dorchester Avenue; Congress Street at Dorchester Avenue; Atlantic Avenue at Kneeland Street; Dorchester Avenue at West Broadway/Traveler Street; and Dorchester Avenue at West 4th Street.

accommodations in the South Station study area and provide dedicated areas for passenger drop-off and pick-up (particularly for shuttle services to the Seaport/Innovation District) throughout the construction period. The FEIR indicated that MassDOT proposes to only monitor traffic during the construction project. While the Preferred Alternative does not include the previously considered joint/private development and parking garage elements, I strongly encourage MassDOT to implement a monitoring program post-construction to evaluate and confirm assumptions regarding use of Dorchester Avenue and Atlantic Avenue access points, mode share assumptions, passenger pick-up and drop-off areas, shuttle services and pedestrian and bicycle accommodations/LOS.

The FEIR included a cross-section layout and conceptual design for Dorchester Avenue, prepared in coordination with the City of Boston, that prioritizes pedestrian and bicycle accommodation on the Fort Point Channel side of the roadway. The design includes a 20-foot wide Harborwalk, a 15-foot wide cycle track, two 11-foot travel lanes, one 11-foot parking or curb lane closest to the headhouse, and a 32-foot sidewalk/storefront zone adjacent to the headhouse. I strongly encourage MassDOT to evaluate, and implement as feasible, opening Dorchester Avenue to pedestrian, bicycle, and Harborwalk access on an interim basis upon demolition and relocation of the USPS during early phases of the construction period.

Re-opening Dorchester Avenue may allow for the establishment of an MBTA bus stop at the South Station headhouse. Locating a stop in this location will facilitate direct service to the Seaport/Innovation District while avoiding Dewey Square. MassDOT should continue to coordinate with the MBTA regarding opportunities to establish/modify routes that would use Dorchester Avenue to enhance bus service. MassDOT should consult with the MBTA to determine necessary bus berthing requirements and bus stop amenities prior to finalizing design of the Dorchester Avenue cross-section and layout. The proposed cycle track on Dorchester Avenue will connect with existing bicycle infrastructure and complement City plans such as the South Bay Harbor Trail and the Summer Street Corridor cycle track.

Public Transit

The expanded headhouse will provide a physical and visual link to the waterfront and improve passenger access to South Station from the eastern side of the site. Passenger boarding will occur from both the trackhead and an elevated concourse, which will be connected to each existing and new platform. The elevated concourse will facilitate circulation by linking the historic headhouse to the tracks and platforms, the bus terminal, and Atlantic and Dorchester Avenues. All existing and new platforms will have direct access to the bus terminal and the Red and Silver Lines and will have at least three points of egress per NFPA requirements. Elevators, escalators and stairs will improve accessibility and will meet ADA requirements, as applicable. The final design should ensure that connections to the Silver Line transitway and Logan Airport are maintained and improved wherever possible.

According to the FEIR, the new station has been designed to provide adequate space and facilities to safety and conveniently manage the projected peak hour pedestrian demand based on a 2035 ridership estimate of 20,000 passengers per day arriving at South Station. MassDOT

operational and design goals include an LOS C during peak periods to accommodate passengers at South Station public circulation spaces, waiting areas and station platforms.

The Preferred Alternative does not include a water transportation connection. The FEIR stated, that as a nonwater-dependent infrastructure facility, the project is exempt from the regulatory standards at 310 CMR 9.51 (Conservation of Capacity for Water-Dependent Use), 310 CMR 9.52 (Utilization of Shoreline for Water-Dependent Purposes), and 310 CMR 9.53 (Activation of Commonwealth Tidelands for Public Use). The FEIR indicated that water transportation may be reassessed if joint/private development is proposed. I received several comments noting the opportunities to provide water connections to South Station. I encourage MassDOT to reassess the feasibility of water transportation at South Station on a recurring basis to determine if this travel mode option is viable. At a minimum, MassDOT, in completing the design of the harborwalk and Dorchester Avenue, should not preclude future accommodations for water transportation infrastructure.

Pedestrian and Bicycle Accommodations

The SSX project will enhance pedestrian and bicycle connection between South Station and adjacent streets, the Harborwalk, and through and around South Station to the adjacent neighborhoods (i.e., Fort Point Channel, Seaport District, South Boston, Chinatown, Leather District, etc.). This includes design elements of the station headhouse and platforms themselves, which will allow cross-connections from Atlantic Avenue to Dorchester Avenue, as well as intersection improvements to improve pedestrian safety and bicycle accommodations along both Atlantic Avenue and Dorchester Avenue. The FEIR indicates that the approximate size and location of long-term and short-term bicycle parking will be determined as designs for the station and Dorchester Avenue progress. Bicycle parking should be determined based on bicycle usage data and mode share goals. The City of Boston recommends bike parking for at least 750-1,000 bicycles. Bicycle parking and cycle track/lanes will complement existing Hubway bike share stations on-site, as well as a new Hubway station on Dorchester Avenue.

<u>Wetlands and Waterways</u>

The FEIR summarized the location and type of wetland resource areas on the South Station and Readville Yard 2 sites (there are no wetland resource areas within the Widett Circle site). Impacts to LSCSF and Coastal Bank are expected at the South Station site and minor impacts to Riverfront Area are proposed at the Readville Yard 2 site. MassDOT will file a Notice of Intent with the Boston Conservation Commission for work on both sites and describe how the project will meet applicable performance standards in accordance with the Wetlands Protection Act (WPA). The FEIR also identified a total of five isolated vegetated wetlands (IVW) totaling approximately 0.64 acres in area at the Readville Yard 2 site that will be impacted by the project. MassDOT assessed these wetlands to determine if they meet the criteria to be classified as Isolated Land Subject of Flooding (ILSF) or are federal wetlands under Section 401 and 404 of the Clean Water Act. On-site evaluation and digital hydrological volume estimations concluded that these isolated wetlands are not jurisdictional under the WPA as ILSF, but do meet criteria for consideration as Waters of the United States. MassDOT should consult with USACE as design advances to determine the federal jurisdiction of these wetland areas and

confirm whether a Section 401 Water Quality Certificate from MassDEP will be necessary to complete the Readville Yard 2 expansion.

The FEIR discussed how the South Station site will meet the c. 91 licensing criteria for a new nonwater-dependent infrastructure license for the construction of the tracks, platforms, and new headhouse on Dorchester Avenue. The project is not expected to negatively impact water-related public interests such as marine commerce or industry, public access, water quality goals, living marine resources, or historic or cultural resources. The FEIR described how the project will be designed to reduce flood and erosion-related hazards on LSCSF and enhance public waterfront access and views of the natural and built environment along the water's edge. As noted by MassDEP, additional information will be required during the c. 91 licensing process to clarify how the proposed open space programming will meet the standard of 310 CMR 9.55(2) that requires reasonable measures to create open space for active or passive public recreational use at or near the water's edge.

The FEIR included a discussion of how the project will comply with the Public Benefit Determination (301 CMR 13.00) criteria established for non-water-dependent projects located completely or partially within tidelands or landlocked tidelands for the project (South Station site and Widett Circle). The FEIR identified the following public benefits: removal of the nonwater-dependent USPS facility from filled Commonwealth Tidelands; expansion of South Station to meet current and future intercity and commuter rail service needs; reopening of approximately five acres of filled tidelands to public access; provision of approximately 0.5 miles of newly opened public roadway; and creation of approximately three acres of public open space.

I will issue a Public Benefit Determination in compliance with the provisions of *An Act Relative to Licensing Requirements for Certain Tidelands* (2007 Mass. Acts ch. 168, sec.8) within 30 days of the issuance of this Certificate.

Stormwater

The FEIR included a stormwater analysis, with supporting data and graphics, for the South Station expansion and layover facilities. This analysis described how the project will be designed to comply with the SMS, as applicable for redevelopment projects. MassDEP comments indicate that the Readville Yard 2 site may not be considered a redevelopment project and may be considered a new development for the purposes of the meeting the SMS. MassDOT should consult with MassDEP on this issue and review stormwater management calculations prior to submission of a Notice of Intent to the Boston Conservation Commission.

The stormwater analysis described existing site conditions, existing and proposed drainage conditions, and proposed stormwater best management practices (BMPs). Selected BMPs will be used to meet Total Maximum Daily Load (TMDL) and Land Uses of Higher Potential Pollutant Load (LUHPPL) requirements. MassDOT evaluated on-site soils and hydrology data to inform the conceptual design of the stormwater management system. Additional soils testing will be required prior to final stormwater management system design. The proposed drainage systems for the project will be sized using the storm event rainfall totals and distributions from the *Northeast Regional Climate Center Extreme Precipitation Analysis,*

which updates data annually, to account for recent trends in larger, more extreme rain events. MassDOT will also cross-check calculations with BWSC's 2015 *Wastewater and Storm Drainage System Facilities Plan Final Report*, which identifies recommended annual rainfall volumes for use in identifying the frequency, overall magnitude and operation costs of future wet weather discharges, as well as the 10-year, 24-hour design storm to use for drainage and conveyance calculations.

For the South Station site, improvements to the existing stormwater management system will be designed based on BWSC's *Regulations Governing the Use of Sanitary and Combined Sewer and Storm Drains of the Boston Water and Sewer Commission* (1998) and stormwater management for the tracks and platforms will be based on the MBTA *Commuter Rail Design Standards Manual.* Impervious coverage at South Station will be reduced by 25 percent and permeable areas may include low impact development measures such as: pervious pavers with underdrains for the sidewalks and Harborwalk; vegetated open spaces; bioretention areas; green roofs and/or tree box filters.

Based on the conceptual design of the layover facilities and potential constraints on stormwater infiltration, the FEIR proposed BMPs for three potential stormwater management approaches: infiltration for all BMPs, a combination of infiltration and non-infiltration BMPs dependent upon available soils subsequent to additional Phase II environmental testing, and a design with no infiltration BMPs. Potential pre-treatment BMPs include: catch basins with deep sumps, drip pans, and oil/water separators. Potential treatment BMPs include: lined or unlined porous pavement, lined or unlined surface BMPs (e.g., vegetated swale, gravel wetland), leaching basins, infiltration basins, or green roofs. The FEIR included conceptual design plans for stormwater management BMPs at each layover facility.

MassDOT should review comments from MassDEP regarding revisions to the conceptual stormwater management system to meet applicable TMDLs, discharges in shellfish growing areas, and the MBTA's potential designation as a Municipal Separate Storm Sewer System (MS4). MassDOT will finalize stormwater system design and demonstrate compliance with applicable SMS and BWSC requirements during review by the City of Boston.

The FEIR identified the location of project area stormwater infrastructure (i.e., pipes, easements and outfall locations) and CSO connections and described the condition of the stormwater and CSO pipes and outfalls to Fort Point Channel. No additional outfalls into Fort Point Channel are proposed. Construction of a dedicated drainage system for the South Station and Readville Yard 2 sites was dismissed as a feasible alternative as it would require easements and additional utility relocation work with minimal benefit to reduce peak flow rates to CSOs. During the advanced design phase for Readville Yard 2, MassDOT will inspect the condition of the 54-inch drainage pipe that outfalls to the Neponset River to determine whether the pipe should be relocated, replaced, or if a structural liner could be installed.

Climate Change Adaptation

The FEIR discussed proposed climate change and adaptation and resiliency measures that will be implemented, or reserved for future review, at the South Station and Widett Circle sites.

The FEIR updated data and analysis to its climate change vulnerability assessment including: newly available flood information from the Federal Emergency Management Agency (FEMA);[7] and results of the MassDOT-Federal Highway Administration (FHWA) Boston Harbor Flood Risk Model (BH-FRM).[8] In absence of mitigation, a future sea level rise scenario of two-feet combined with the 1% annual chance (100-year storm) floodplain (FEMA maps) would encompass approximately 28 acres of the South Station site and completely inundate the 30-acre Widett Circle Site. The BH-FRM model predicts both flooding extent and flood depths in a sea level rise scenario of 0.62 feet by the year 2030 and 3.2 feet by the year 2070 in addition to a 1% coastal flood exceedance probability (CFEP) flood event. These data indicate that shallow flooding will occur within the South Station project footprint under current and 2030 conditions. In the 2070 condition, portions of the South Station platform areas could flood to depths between 0.5 feet and 1.5 feet while the portion of the site, including tracks, extending west away from South Station and south towards Widett Circle could flood to a depth of between 1.0 and 2.5 feet. In the 2070 scenario, Widett Circle, as well as much of the surrounding area, is predicted to flood to depths between 1.5 and 2.0 feet.

Site-specific elements to mitigate impacts due to sea level rise and severe storms will continue to be evaluated during the design process and selected based upon further analysis of projected climate change impacts. MassDOT should revisit adaptation strategies on a regular basis as new sea level rise and flooding projections are made available to ensure proactive responses to potential climate change impacts. These climate change adapation and resiliency mitigation measures are described later in this Certificate. I strongly encourage MassDOT to focus not only on mitigation measures at the South Station site, but those that may allow for climate change adaptation at the Widett Circle site to avoid potential loss of critical infrastructure during a major storm event. Furthermore, design of some of these climate change adaptation measures, particularly increasing the elevation of the Fort Point Channel seawall, will be subject to review under the Wetlands Protection Act.

Water and Wastewater

The FEIR included an updated table of estimated existing and proposed water usage and wastewater generation at the South Station, Widett Circle, and Readville Yard 2 sites. These estimates considered the removal of existing uses on site (i.e., USPS facility, commercial/industrial uses at Widett Circle) in determining the net increase in water and wastewater volumes. As only light maintenance activities are proposed at the layover facilities, no industrial wastewater will be generated by the project. Wastewater at the South Station site is collected through a series of BWSC sanitary sewer mains, combined sewer mains, and combined sewer overflows (CSOs), the latter of which discharge to the Fort Point Channel. MassDOT will confirm (through data collection and/or field inspection) all existing outlet discharge flows to Fort Point Channel outfall pipes during final design. These data should be provided to the MWRA and BWSC. Demolition of the USPS Facility and South Station construction activities will be required to maintain the structural integrity and outlet protection for the BWSC's 81-inch by 81-inch Kneeland Street CSO.

[7] FEMA, Flood Insurance Rate Maps for Suffolk County, Massachusetts, revised March 16, 2016.

[8] MassDOT-FHWA, Pilot Project Report: Climate Change and Extreme Weather Vulnerability Assessments and Adaptation Options for the Central Artery, June 2015.

The SSX project will include water efficiency measures, such as low flush toilets and fixtures, to minimize water use and wastewater generation. According to the FEIR, the BWSC has indicated that there is adequate capacity in its water and sewer mains in the vicinity of South Station and both layover facilities to accommodate the increased water demand and sewer flows. The FEIR noted that depending upon the construction staging and final location of service connections, the sewer main within Dorchester Avenue may require replacement. MassDOT should continue to coordinate this matter with BWSC during final design and construction sequence planning.

New wastewater flows generated at the South Station site will require offsets by reducing inflow and infiltration (I/I) in hydraulically connected sewers systems in accordance with MassDEP policy. Offsets must be provided at a 4:1 ratio (602,240 gpd total). MassDOT will work with MassDEP and BWSC to develop an I/I plan as station design advances. This I/I plan should demonstrate that CSO impacts from the new wastewater flows are avoided or fully mitigated at the CSO outfalls associated with the BWSC sewer system serving South Station and those further to the north along the downtown waterfront (CSO 057 and CSO 060). According to the FEIR, BWSC has indicated that it is unlikely that adequate piping is available in the immediate vicinity of the project site to meet the I/I requirements. Therefore, additional areas of mitigation may need to be identified. Each layover facility is exempt from the I/I requirement, as they generate less than 15,000 gpd of wastewater.

The FEIR acknowledged that sea level rise could affect downstream CSOs and MWRA facilities and, therefore, the performance of the wastewater collection system. Three CSO outlets to the Fort Point Channel (CSO 064, CSO 065 and CSO 068) may require additional mitigation measures to minimize the inflow of seawater into these CSO's. MassDOT will coordinate with BWSC as the project progresses to comply with BWSC's plan to modify CSO and storm drain outfall operations in response to sea level rise. The BWSC plan includes:

- Ensuring all outfalls have tide gates to protect facilities and operations from flooding due to a combination of storm surge and sea level rise;
- Use of recommended design flood elevations (18 to 22 feet Boston City Base (BCB)) to determine if and when backflow prevention is required on storm drain outfalls; and
- Periodic reevaluation of the frequency and procedures for tide gate and outfall maintenance and replacement to assure proper operations under more frequent submergence due to higher sea levels.

Air Quality

The project will generate emissions from locomotives entering and leaving South Station, activities at layover facilities, and through the addition of vehicular traffic. As demonstrated in the DEIR, the project will not result in exceedances of the Massachusetts or National Ambient Air Quality Standards (MAAQS and NAAQS). The air quality analysis, using $PM_{2.5}$ as a surrogate, concluded on a qualitative basis, that the project will result in an increase in diesel particulate matter (DPM) and ultrafine particulates (UFPs) compared to a No-Build Alternative.

At this time, DPMs and UFPs do not have established MAAQS or NAAQS. As the Preferred Alternative will not include enclosed spaces where potential pollutants may become concentrated, no additional air quality modeling was necessary in the FEIR.

The Preferred Alternative station design and platform and track layout will not alter predicted noise and vibration characteristics from those presented in the DEIR. This assessment was performed in accordance with FTA criteria and standards to evaluate project impacts on noise-sensitive receptor locations. The FEIR identified the location, type and elevation of proposed noise barriers within the SSX project areas to mitigate noise and vibration impacts from the Preferred Alternative. Proposed noise and vibration mitigation measures for both the construction and operational periods are identified later in this certificate. The FEIR indicate that the noise barrier at South Station will provide far greater noise reduction than required. Therefore, MassDOT has not proposed post-construction noise monitoring at this location. Vibration monitoring is also not proposed due to the slow speed of trains entering and exiting the station. I strongly encourage MassDOT to reconsider this monitoring approach at both South Station and Readville Yard 2 in the post-construction condition to confirm modeling accuracy and the efficacy of proposed noise mitigation measures. Noise mitigation measures should consider the maximum potential noise impacts at Readville Yard under certain conditions where locomotive shore power connections are not feasible such as extreme cold conditions.

Greenhouse Gas Emissions

The FEIR described the project's consistency with the *MEPA Greenhouse Gas Emissions Policy and Protocol* (the Policy) and proposed measures to avoid, minimize, and mitigate GHG emissions. The FEIR did not include revised building energy modeling, as the data remain unchanged from the DEIR analysis. The FEIR did clarify the modeling inputs (e.g., R-values, U-values, efficiencies, lighting power density, etc.) for items such as equipment, walls, ceilings, windows, lighting, HVAC units, etc. that were modeled in the Baseline Case (Massachusetts Building Code, 8th edition, ASHRAE 90.1-2010) and Build with Mitigation Case (demonstrating compliance with the Stretch Energy Code) to allow for comparison with Building Code requirements. I note that the GHG modeling results for the Preferred Alternative only indicate a reduction in energy use intensity (EUI) of 10%, well below the requirement necessary for compliance with the Stretch Energy Code. Given the timeframe for project development and construction, it is likely that building code requirements will become more stringent than those modeled in the DEIR. I remind MassDOT that they will be required to demonstrate compliance with the applicable Building Energy Code in effect at the time construction commences. To achieve compliance, additional energy efficiency measures will likely be necessary. MassDOT should review the recommendations from the Department of Energy Resources (DOER) comment letter to identify additional energy efficiency measures for consideration during final design. The structures at the two layover facilities will be required to comply with the applicable building energy code and Stretch Energy Code prescriptive energy efficiency measures. MassDOT will consider implementation of Leadership in Energy and Environmental Design (LEED) standards and the FHWA Infrastructure Voluntary Evaluation Sustainability Tool (INVEST) as guidance during final design.

As currently proposed, the new headhouse will be constructed as either a separate addition or as a new adjacent building on the property and will utilize new independent building systems, including ventilation. I note that many of the key building energy model inputs for the project do not include improvements beyond the base building code requirements. MassDOT should reevaluate these measures as project design advances, particularly in light of preliminary modeling indicating that the Stretch Energy Code requirements have not been met with the current design. Total stationary source GHG emissions for the Preferred Alternative are estimated at 2,192 tons per year (tpy) a 195 tpy (or 8%) reduction from the Base Case of 2,387 tpy.

The FEIR analyzed the feasibility of connecting to the Veolia steam system, which includes a mix of combined heat and power (CHP) sources (from Kendall Generating Station (KGS) in Cambridge) and traditional boilers (primarily from Kneeland Street Station in Boston) as an additional GHG reduction measure. The FEIR assessed a scenario where the project would have 100% of its heating needs (building heat and domestic hot water) and 100% of its building cooling needs (through the use of absorption chillers instead of electric chillers) supplied by Veolia district steam. This analysis indicated that this scenario would further reduce project-related stationary source emissions by approximately 20%. MassDOT will conduct an energy cost analysis during the design phase and work with Veolia on possible connection terms. Selection of this GHG mitigation measure will be contingent upon economic, reliability, complexity, and environmental factors.

The FEIR provided additional discussion of potential solar photovoltaic (PV) or solar hot water (SHW) systems. As noted in the DEIR, usable roof area is predicted at 35,000 sf due to dedicated mechanical space and shadowing. This size array is estimated to generate approximately 420 kW of peak direct current (DC) and offset approximately 166 tons of CO_2 annually. A SHW system could generate approximately 4,200 MMBtu per year, exceeding the expected domestic hot water demand for the terminal expansion (559.3 MMBtu/year). A SHW system would displace fuel use in a natural gas-fired boiler, offsetting approximately 245 tpy of CO_2. The analysis identified two potential challenges to implementing solar PV on-site: likely future shadowing due to development in the area and connections to the electrical grid via spot network vaults. Spot network connections are estimated to limit on-site generation to less than 40kW. Challenges to implementing SHW include excess supply, future shadowing potential, interconnections with Veolia steam, and available financial incentives. MassDOT should continue to assess options to incorporate solar PV or SHW based upon the final design and known implementation challenges. At a minimum, all roofs should be solar-ready.

The FEIR analyzed an on-site gas-fired CHP system to produce electricity and hot water and reduce the need for natural gas for domestic hot water heating while providing a portion of the building's electricity needs. The analysis indicated that a feasible CHP technology designed to meet the project's thermal load will be small (5 or 10kW). The FEIR evaluated a 10kW micro-CHP, as a larger system would remain idle during the spring and fall due to the project's energy demand profile. Electric interconnection issues will also likely preclude use of an on-site CHP larger than 40kW. The GHG analysis indicates that a 10kW CHP system will provide only a nominal GHG emissions reduction (less than one tpy) and, therefore, is not proposed.

The GHG analysis considered the GHG impacts of locomotive plug-ins and Amtrak trains. The GHG analysis compared scenarios where locomotives did not plug in, to a case where trains spend 3.5 hours plugged in per layover.[9] The analysis considered equivalent operations 365 days per year; it did not account for reduced weekend service. Total electric load associated with plug-ins is estimated at approximately 7,486 MWh per year, or 2,717 tpy of CO_2. This is a substantial reduction in CO_2 emissions compared to idling on the diesel engine, which is estimated at approximately 18,933 tpy of CO_2. The GHG analysis also assumed the addition of eight new daily electric Amtrak trains that will idle at South Station for 30 minutes per day and move to and from the Tower 1 Interlocking. Total daily electric use for these trains is estimated at 1,680 kWh, equating to approximately 222.6 tpy of CO_2.

Overall GHG emissions for the Preferred Alternative are projected as follows:

Emissions Source	Annual CO2 emissions (tpy)
Stationary Source Direct Emissions	159
Stationary Source Indirect Emissions	2,033
Transportation Mobile Source Emissions	7,801
Indirect Emissions from Electricity for Plug-ins	2,717
TOTAL	**12,710**

Historic Resources

The FEIR included a matrix of potential effects to National Register-Listed or National Register-eligible historic architectural resources within the Preferred Alternative's Areas of Potential Effect (APE). There are no historic properties within the Widett Circle or Readville Yard 2 layover site study areas. MassDOT considered historic resources during its assessment of potential noise and vibration impacts from the project. The project is not anticipated to have an adverse visual effect on views to or from historic properties in the South Station APE. MassDOT completed a preliminary determination of effect analysis for historic properties in the SSX APE, concluding that the project will have either "no effect" or "no adverse effect" on identified historic resources. A Section 106 Report will be submitted to the MHC separately as part of the NEPA/Section 106 review process. That report will provide FRA determinations of effect in compliance with Section 106.

MassDOT should provide conceptual designs and architectural drawings of the proposed new construction and any modifications to the historic South Station headhouse to MHC at the 30% design stage. MassDOT should also provide MHC with engineering drawings and detailed project plans for the proposed improvements to the Fort Point Channel seawall, as the historic seawalls are listed in the National Register of Historic Places as contributing resources to the Fort Point Channel Historic District.

[9] Average midday layover is 4.5 hours based on equipment cycles, of which 30 minutes after arrival and 30 minutes prior to departure is assumed to be spend idling on diesel.

Hazardous Materials

MassDOT completed Phase I Environmental Site Assessments (ESAs) for the South Station Site (with the exception of the USPS facility, which was not available for investigation), and the Widett Circle and Readville Yard 2 layover facility sites. The ESA's identified Recognized Environmental Conditions (RECs) and Historic Recognized Environmental Conditions (HRECs) for these properties. MassDOT will conduct Phase II ESAs for the South Station, Widett Circle and Readville Yard 2 sites. The FEIR included a draft site specific health and safety plan (HASPs) for each SSX project site. Construction activities will be conducted in accordance with the Massachusetts Contingency Plan (MCP) (310 CMR 40.0000), likely via a Release Abatement Measures (RAM) plan, with a specific focus on soils management and potential groundwater contamination and dewatering. Final site conditions may require the placement of an Activity and Use Limitation (AUL). The FEIR noted that current remediation activities are ongoing at the Readville Yard 2 site and any future work on site will need to be coordinated with the RAM plan for this work and modified as necessary.

Construction Period

The FEIR included a draft Construction Management Plan (CMP) that addressed construction period air quality impacts, soil and sediment control, noise and vibration impacts, traffic impacts, and work hours. The FEIR described potential construction period access locations and laydown areas for station, rail and layover facilities. No traffic detours are expected as a result of construction work. The FEIR discussed potential service modifications to commuter rail, freight and Amtrak services during the extended construction period. The construction phasing schedule will focus on minimizing impacts to passenger use during peak hours. I strongly encourage MassDOT to continue to work collaboratively with the MBTA, City of Boston, Amtrak, freight users, and other stakeholders to finalize a construction phasing plan that minimizes service disruption and passenger experience while limiting the construction period to the maximum extent feasible.

Mitigation and Section 61 Findings

The FEIR identified measures to avoid, minimize and mitigate environmental impacts and included draft Section 61 Findings for use by State Agencies. Environmental mitigation commitments include:

Traffic and Transportation

- Update eight intersections to improve traffic flow, reduce queuing, and improve pedestrian and bicycle mobility:
    - Atlantic Avenue at Summer Street:
        - Restripe Atlantic Avenue to align lanes through Summer Street;
        - Optimize signal timings and phasing;
        - Eliminate double left-turn conflict from Atlantic Avenue to Summer Street.
    - Atlantic Avenue at Kneeland Street:
        - Replace traffic loops on MBTA driveway;

        - Optimize signal timings and phasing.
    - Surface Road at Essex Street and Lincoln Street:
        - Include pedestrian lead intervals during pedestrian phases;
        - Install new crosswalk to meet desire line crossing Surface Road;
        - Optimize signal timing and phasing.
    - Surface Road at Purchase Street and Summer Street:
        - Install crosswalk on westbound approach;
        - Improve pedestrian phasing;
        - Optimize signal timings and phasing.
    - Dorchester Avenue at Congress Street:
        - Optimize signal timings and phasing.
    - Dorchester Avenue at Summer Street:
        - Optimize signal timings and phasing.
    - Dorchester Avenue at West Broadway:
        - Restripe West Broadway westbound approach;
        - Optimize signal timings and phasing to include concurrent pedestrian phasing.
    - Dorchester Avenue at West 4th Street:
        - Optimize signal timings and phasing;
        - Increase pedestrian walk times.
- Implement a TDM program with the following elements:
    - Incorporate bicycle parking in the new headhouse on Dorchester Avenue;
    - Participate in EPA's SmartWay Transport Program;
    - Provide electronic signage displaying transit schedule information;
    - Provide dedicated curbside space for taxicabs, passenger drop-off and pick-up, and private shuttles along Dorchester Avenue;
    - Improve bicycle accommodations on Atlantic Avenue from Kneeland Street to Summer Street in coordination with the City of Boston; and
- Increase curbside capacity by removing six parking meters from Atlantic Avenue along the project frontage;

Wetlands and Waterways

- Provide public benefits including increased open space and public access on-site and along Dorchester Avenue; and
- Limit direct wetland resource area impact to the maximum extent practicable, comply with applicable performance standards in the WPA regulations, and implement soil erosion and sediment controls.

Stormwater

- Design and install structural and nonstructural stormwater BMPs to mitigate stormwater peak flow rates, runoff volumes, groundwater recharge volumes, and water quality in accordance with MassDEP SMS;
- Design and install stormwater management infrastructure consistent with BWSC design requirements and in consideration of soil/hazardous materials constraints on potential groundwater infiltration;

- Prepare a site-specific Stormwater Pollution Prevention Plan (SWPPP) in accordance with NPDES Construction General Permit requirements; and
- Develop an Operation and Maintenance (O&M) plan for each site.

Climate Change

- Raise the existing seawall and an adjacent portion of Dorchester Avenue from its current elevation of 10.5 feet to 12.5 feet to match the elevation of the seawall to the north and south of the site. This design modification is in response to a predicted two-foot sea level rise by the year 2050 above the base flood elevation of 10.0 feet;
- MassDOT will continue to evaluate mitigation measures to minimize South Station's vulnerability to flooding events. This includes: repair and maintenance procedures of underground systems during design and construction (elevating power/heating, HVAC sources and critical systems to higher elevations), designing critical equipment to accommodate seawater flooding, waterproofing subsurface site elements, and using corrosion protection elements and materials for underground structures; and
- Extreme heat impacts will be considered during final selection of sustainable design guidelines for the project.

Water and Wastewater

- Develop and implement an I/I plan in coordination with MWRA, BWSC and MassDEP to offset additional wastewater generation from South Station;
- Incorporate water efficiency measures (e.g., low flow toilets and fixtures); and
- Design and construct utility improvements consistent with BWSC requirements, including measures to limit impacts to existing utility infrastructure and maintain consistency with climate change preparedness goals for outfall locations in Fort Point Channel.

Air Quality

- Construct an 18-foot tall, 1,450-foot long noise barrier along the South Station frontage to Fort Point Channel and Dorchester Avenue to provide approximately 10-12bBA noise reduction. This noise barrier will be constructed in accordance with the current edition of AASHTO's *Guide Specifications for Structural Design of Sound Barriers*, and with MassDOT's *Standardized Foundations for Sounds BarrierWalls;*
- Reconfigure an existing 18-foot tall, approximately 400-foot long berm/noise barrier at Readville Yard 2 to provide additional noise mitigation to the single-family homes along Wolcott Street and Wingate Road and apartment buildings on Riley Road and Sierra Road. Remove approximately 200 feet of existing barrier and add up to 600 feet of a new/modified barrier (800 feet total length);
- Add electric power stations (i.e., shore power) at layover facilities to allow locomotives to be plugged in and reduce engine idling compared to facilities without shore power options; and
- Install doors to separate the headhouse from the track and platforms at South Station.

Greenhouse Gas Emissions

- The project will be required to comply with the applicable Building Energy Code and Stretch Energy Code in effect at the time project construction commences;

- The project will include plug-in capacity for locomotives reducing CO2 emissions from 18,933 tpy to 2,717 tpy compared to idling on diesel engines in equivalent idling/layover scenarios; and
- MassDOT will continue to evaluate the feasibility of connection to the Veolia steam system to realize additional GHG benefits.

Hazardous Materials

- Conduct Phase II ESAs for the South Station, Widett Circle and Readville Yard 2 sites. MassDOT will implement a soil and groundwater sampling and analysis program to provide information to establish the presence and extent of contaminated material; establish requirements for treatment and management of groundwater to be dewatered during construction; avoid exacerbation of existing groundwater or soil contamination in design for construction; and meet the performance standards of the Massachusetts Contingency Plan (MCP) (310 CMR 40.0000);
- Implement a site specific health and safety plan (HASP); and
- Identify asbestos containing materials (ACMs) and hazardous materials prior to demolition.

Construction Period

- MassDOT will develop a construction phasing schedule to balance and optimize the duration and impact of overnight work windows, weekend work outages, and strategic track closures;
- Comply with MassDOT specifications for traffic management requirements and work hour provisions;
- Submit and implement a Dust and Emissions Control Plan;
- Implement a Soil Erosion and Sediment Control Plan;
- Comply with MWRA, BWSC and/or MassDEP regulations and standards for construction period dewatering;
- Conduct work in compliance with MCP requirements, including soil management procedures and construction monitoring by a Licensed Site Professional (LSP), as required; and
- Implement noise and vibration controls, including, but not limited to:
    - Install temporary noise barriers;
    - Apply acoustic enclosures and setting acoustic shield requirements for jackhammers, chainsaws, and pavement breakers;
    - Establish protocols for reporting noise monitoring results, noise reduction measures used, and responses to the community;
    - Locate stationary construction equipment as far as possible from noise-sensitive sites;
    - Conduct noise monitoring after service starts (with proposed mitigation in place) to evaluate whether the actual noise levels correspond with the modeled values and take corrective actions is actual values are higher than projected;
    - Use pre-augering holes to reduce vibration impacts from pile driving; and
    - Minimize and/or avoid the use of impact and vibratory equipment that generates higher vibration levels (104 to 110 VdB at a distance of 25 feet from the pile

driver), to avoid potential damage to buildings located within 65 feet of such equipment.

The FEIR provided draft Section 61 Findings for use by State Agencies. These draft Section 61 Findings should be revised in response to this Certificate and provided to State Agencies to assist in the permitting process and issuance of final Section 61 Findings.

Conclusion

Based on a review of the FEIR, comment letters and consultation with State Agencies, I find that the FEIR adequately and properly complies with MEPA and its implementing regulations. Outstanding issues will be addressed during State and local permitting processes. The Proponent and State Agencies should forward copies of the final Section 61 Findings to the MEPA Office for publication in accordance with 301 CMR 11.12.

August 12, 2016
Date

Matthew A. Beaton

Comments received:

6/21/2016	New Boston Food Market Development Corporation (received 7/18/16)
7/12/2016	Graham W. Jenkins
7/20/2016	Frank S. DeMasi
7/20/2016	Dr. David L. Westerling
7/22/2016	Robert J. La Tremouille
7/28/2016	Massachusetts Historical Commission
7/31/2016	State Representative Frank I. Smizik, 15th Norfolk District; State Representative Sean Garballey, 23rd Middlesex District; State Representative Carmine L. Gentile, 13th Middlesex District; and State Representative Chris Walsh, 6th Middlesex District
8/1/2016	League of Women Voters of Massachusetts
8/2/2016	Andrew Jennings
8/3/2016	Sandra Peters
8/3/2016	Medical Academic and Scientific Community Organization (MASCO)
8/3/2016	David Martin
8/3/2016	Steve Hollinger
8/4/2016	Robert Gilmore
8/4/2016	George Schwartz
8/4/2016	Richard Koch

8/4/2016	Yanni Tsipis, on behalf of WS Development
8/4/2016	Dusty Rhodes
8/4/2016	David Hancock
8/4/2016	Lawrence DiCara
8/4/2016	Related Beal
8/4/2016	A Better City
8/4/2016	Massachusetts Convention Center Authority
8/4/2016	Mayor Setti D. Warren, City of Newton
8/4/2016	U.S. Representative Michael Capuano, 7th District, Massachusetts
8/4/2016	State Representative Carmine L. Gentile, 13th Middlesex District
8/5/2016	Boston Children's Museum
8/5/2016	Boston Harbor Now
8/5/2016	Young K. Park, Berkeley Investments
8/5/2016	Paola M. Ferrer, Harry Mattison, Steven Miller, Galen Mook, Ari Ofsevit (Livable Streets Alliance), Rich Parr, and Carol Ridge Martinez (Allston-Brighton CDC)
8/5/2016	Seaport TMA
8/5/2016	P.E. Kutcher
8/5/2016	Karen Cord Taylor
8/5/2016	Brad Bellows
8/5/2016	James RePass Sr.
8/5/2016	Massachusetts Water Resources Authority
8/5/2016	Frederick Salvucci
8/8/2016	Cambridge Innovation Center
8/5/2016	Metropolitan Area Planning Council
8/5/2016	Frederick A. Kramer
8/5/2016	Stephen H. Kaiser
8/5/2016	Sierra Club Massachusetts
8/5/2016	The Drew Company
8/5/2016	Massachusetts Port Authority (Massport)
8/5/2016	Massachusetts Department of Environmental Protection – Northeast Regional Office (MassDEP-NERO)
8/5/2016	Ed Mueller
8/5/2016	Robin Pope
8/5/2016	Harvard College, Office of the Executive Vice President
8/5/2016	Massachusetts Office of Coastal Zone Management
8/5/2016	City of Boston
8/10/2016	Heidi A. Wolf, General Manager Residences at the InterContinental
8/11/2016	Department of Energy Resources

MAB/HSJ/hsj